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SMITHSONIAN DEPOSIT.

The Paper Trade Journal.

"The Consumption of Paper is the Measure of a People's Culture."

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Trade Topics.

Paper Mill Problems.—XIII.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James F. Hobart.

One of the biggest problems in paper mill work is that of using worn out material. Paper making itself starts with worn out material, or it used to be so before wood pulp revolutionized the business, for then second-hand rags, and very much second-hand at that, formed the chief supply for the craft.

In the mechanical department we have shafts bent or cut; they must be used, and we can use them; but the scrap heap is the best place to use them in. If they must be used in the mill, straighten all that is possible; a screw press is necessary for this purpose. After they are as straight as the time at disposal will allow, put each piece of shaft in a lathe and turn down one size. In this way, and only in this manner, can a badly bent shaft be made to give satisfaction. It is a peculiarity of shafting that it cannot be turned straight. Even after the turning operation is finished and the shaft comes from the lathe, it will be found slightly sprung, and the screw press, together with a little judicious hammering, must be resorted to to make each shaft run perfectly true. Cold rolled shafting is perhaps an exception to this rule.

When shafting is badly cut and scored by having been run in boxes without babbitt or by having set-screw fastened pulleys get loose thereupon, such shafting as this must be turned down to a smaller size in order to make a good job of it. Worn out tools must also be used; indeed it is frequently heard around paper mills that "the pipe tongs are worn out, sir." "All right," says the owner, "wear them in again." This the millwright has to do in many instances. Take a pair of pipe tongs, for instance; they may be ground or the temper may be drawn and the teeth filed up. Worn out augers, especially of the patent variety, became too small after considerable use. The outside of the cutting lip wears off and the teeth will bore a hole too small for the body of the concern to go through.

Worn out paper machinery can be rebuilt. Beater and Jordan rolls can be refilled, but it is better to sell them, especially the former, to manufacturers of leather board or "shoddy." A worn out web cutter should be disposed of by throwing it away. I have rebuilt them both when worn out and after they have been turned—they are worse than useless, they are delusions. When you think that the cutter has been satisfactorily repaired and will do good work, it proves to be little better than a cutter arm scythe for working up webs into sheets.

Old floors in beater and engine rooms need attention. See first if they are worn out or rotten. If worn or decayed replace the flooring, and the timbers too if necessary, with good material, then cover with boiler iron. It doesn't pay to patch up an old floor by plating it. For machine rooms don't attempt wooden floors, but use tiles set in cement, and they will outlast the owner.

Worn out bearings, when too small to be re-turned and used in that condition, may frequently be turned down enough to get rid of the eccentric caused by wear. Then put the iron thus turned into a flask in the foundry and cast a brass shell around it. Finish up in the lathe and a good job is the result. This is excellent for Corliss engine valve stems and bearings of machine rolls which have become worn too small to stand re-turning. Stuff pump valves are frequently worn out of truth, and an elliptic ball is about as good for use as a valve as a small sized paving stone would be for a watch charm. Such a ball should be put in a lathe, a piece of wood may be put upon the face plate and a small cavity turned in the centre thereof. Place the ball in the wood, put a drill pad in the tail spindle and bring the whole business up against the ball. With a hand tool cut a single, shallow V-shaped curve around the centre of the ball, just deep enough to show all around its circumference. Loosen up the tail spindle, turn the ball 90 degrees and again bend in the lathe. Then with the hand tool carefully yet boldly turn down the ball until the V first cut is all gone.

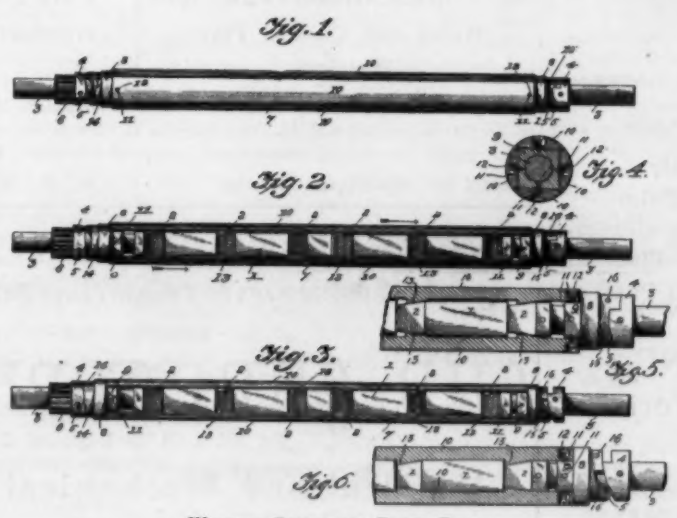
Be careful not to cut too deep, but take off material below the whole of the V-shaped curve. A little lampblack rubbed into the curve with oil will serve to make it better. Repeat the curving and turning operations two or three times if necessary, and the result will be a perfectly spherical ball, which will make a tight joint.

Sometimes the millwright has a particularly vexing problem in leveling. The main shaft frequently takes a notion to get on a slant to the detriment of the gears and other nice apparatus connected with it. It is not of much use to tackle such a job with a carpenter's 2 foot level, neither is it of any use to do as the masons sometimes do, viz., attempt to stretch a line and level it with a spirit level. True, they can get it "within a hair," and sometimes "within a red hair," but it must be considered that a mason's hair is 4 inches and a red hair is just 3 inches. To get a level between two buildings a machinist put two screw eyes into a stick 4 feet long and adjusted them so that both projected alike. He put a string through the eyes and suspended the string from the points to be leveled. The centre of the string was fastened to the centre of the stick, then a level was set up under the stick and one end of the string was moved up and down until the stick was level; then the two ends of the string were level also. This method would not answer for underground work in the wheel pit, where one thirty-second of an inch means long wear or quick destruction for a set of $400 gears.

A millwright of my acquaintance, who had wrestled with this question for some time with doubtful results, hit upon the plan of using a rubber hose long enough to reach comfortably between the points to be leveled. A common water line glass from the steam boiler was placed in the end of the hose; another glass was put in the opposite end. The hose was filled with water, the tubes were brought together side by side in a perpendicular position, and the height of water was carefully marked upon each tube. Then a cork was placed in the free end of each tube, and the apparatus was put in position at the points to be leveled, the gears being strung from one place to the other. After the glass tubes were brought approximately level with each other the corks were removed, and the tubes some 40 feet apart were adjusted so that the water level stayed at the given mark as it did when they were close together.

In case of any leakage or other trouble the water level could not be brought to the marks in both tubes. In practice it was found unnecessary to watch both tubes except to see that there had been no leakage, for upon bringing the water in tube No. 2 to the mark already described it was found that the water in tube No. 1 must necessarily rise to the same mark. Some very accurate leveling was done around the mill in this manner.

Some repairs in a backwoods mill having to be made, and no forge being accessible, one was extemporized in the following manner: A large pair of hand pulleys was found at a neighboring farm house; two pairs were finally secured, then a box 2 feet long and 20 inches square, made of inch boards, was nailed up, open at both ends. This was set on end upon the ground, filled partly full of dirt, and then brick was laid in all around the outer edge of the box, leaving a cavity 12 inches square in the centre of the box. Firebrick were set up edgewise on this cavity, yet further reducing its area to about 6 inches. Two holes were bored through the wooden box just below the brickwork, through which the nozzles of the hand bellows were introduced. Three or four pieces of small flat iron were placed across the centre of the box below the top course of brick, and upon these pieces of iron a bit of chain was coiled up. The links to the chain were about 1 inch long and one-quarter inch iron. The coiled up chain formed a tuyere iron through which air from the bellows passed to the coil which laid upon the top of the chain. By vigorously working the two hand bellows, which were placed as stated through holes on opposite sides of the box, quite a respectable blast was obtained, and the smith was enabled to weld half-inch and three-quarter inch iron very readily. A piece of railroad iron answered for an anvil. There was not a vise in the mill; one had to be used in manipulating the forging, and after a little thought, mingled with sundry scratchings of the head, the work was taken to a railroad track in the yard, placed in a switch, and the lever was thrown over, thus making the switch into a vise. Subsequently another vise job had to be done, and a locomotive happening to be on a side track, the work was placed between the driver and the brake. The engineer obligingly put on the air, and the iron was held as firmly as in any first-class vise.



Winding Shaft for Paper Rolls.

Winding Shaft for Paper Rolls.

An illustration is given of an improved winding shaft adapted for use in forming rolls of paper and similar material, the object being to provide means whereby the shaft may be contracted after the formation of the roll in order to facilitate the removal of the roll from the shaft.

Figure 1 is a side view of the shaft, expanded. Fig. 2 is a similar view with one or more of the cross sectional segmental sections of the roll omitted, the roll being shown expanded. Fig. 3 is a similar view showing the roll contracted. Fig. 4 is a detail cross section on the line 4, 4 of Fig. 1. Fig. 5 is a detail section of one end of the shaft, with the parts shown in positions indicated in Fig. 2. Fig. 6 is a similar view of one end of the shaft, with the parts shown in the position indicated in Fig. 3.

1 represents a core which is cross sectionally angular and is provided at intervals with beveled or inclined surfaces, 2, the ends of the core being reduced and rounded to form spindle portions, 3, to which are secured the fixed collars 4 having inner cam faces, 5. On one of the spindle portions is arranged a gear, 6, which may be replaced by a chain wheel or belt pulley, or other equivalent device, this gear chain wheel or pulley being the means whereby rotary motion is communicated to the core.

The shell 7 of the shaft is mounted to slide upon the core, and for this purpose is provided with terminal sleeves, 8, having inner angular bosses, 9, to the flat sides of which are secured the extremities of the cross sectionally segmental sections 10, the sections being provided with terminal openings, 11, through which extend guide pins or screws, 12, the pins or screws engaging the said bosses. This construction provides for radial movement of the sections of the shell, and in order to prevent the heads of the pins or screws from projecting beyond the exterior surfaces of the sections, when the shaft is contracted, the heads are countersunk a distance equal to or in excess of the extent of movement of the sections.

The shell sections are provided upon their inner surfaces with beveled or cam faces 13, the inclination being in the opposite direction to that of the beveled or cam faces 2 on the core, whereby when the shell is moved in one direction (namely the direction indicated by the arrow in Fig. 2) the shell sections are forced radially outward, thus expanding the shaft. When the shell is moved in the opposite direction to that indicated by the arrow in Fig. 2, the shell sections are adapted to approach the centre of the core, and thus contract the shaft. In order to obtain this longitudinal movement of the shell, to contract and expand the shaft, rotary cams, 14 and 15, are arranged respectively between the ends of the shell and the contiguous fixed collars 4, the cam faces of the cams being in operative relation with the cam faces of the collars and the smooth faces of the cams being in contact with the surfaces of the sleeves 8.

When the cam 14 is turned in the direction indicated by the arrow in Fig. 1 the shell is moved in the direction indicated by the arrow in Fig. 2, to expand the shaft, and when the cam 15 is turned in the direction indicated on the cam in Fig. 1 the shell is moved in the opposite direction to that indicated by the arrow in Fig. 2, thus contracting the shaft.

The cams are provided with sockets, 16, to receive studs or projections on a wrench. Any suitable form of wrench may be employed. From the above description it will be seen that when the shaft is to be used to form a roll, it should be expanded by the means provided for that purpose, and after the roll has been completed it should be contracted, thereby relieving the pressure of the surface of the shaft upon the inner surface of the roll and allowing the roll to be withdrawn by sliding the same longitudinally. The surface of the shell is preferably scored or roughened, as shown clearly in Fig. 1, in order to increase the friction during the winding or formation of the roll.

Law Points.

From Latest Decisions.

[COMPILED FOR THE PAPER TRADE JOURNAL.]

The liability of a common carrier for goods which it has undertaken to transport to a point on a connecting line ceases upon arrival at such point.

A passenger is entitled to recover for delay in delivery of baggage the value of its use between its actual arrival and the time that it should have arrived.

Possession and control by a merchant of a stock of goods previously transferred to relatives in satisfaction of alleged debts is a badge of fraud on his creditors.

Taking a principal's money constitutes embezzlement, notwithstanding want of actual concealment and a subsequent confesion, where the taking was not open or under a claim of right.

Mere inadequacy of consideration is not sufficient to establish fraud or mental incapacity to enter into a valid contract, but it is a circumstance which may be considered in connection with other facts in the case.

An acknowledgment of liability made to a third person, with the understanding that such acknowledgment should be conveyed to the creditor, will be as binding upon the debtor as if it were made to the creditor directly.

Where a contract is made for the sale and delivery of goods in instalments, and the seller fails or neglects to make the delivery of the first instalment at the time agreed upon, the purchaser may rescind the entire contract.

One who sells goods and takes the purchaser's notes, cannot, before maturity of such notes, sue for the price and interest, and attach the property of the debtor, though he alleges that the sale was procured by false representation.

The purchaser of a stock of goods may maintain deceit against the seller for a false representation as to the amount of current sales, where such representation formed one of the inducements for purchasing, and he had no opportunity to examine the books.

On a quantum meruit claim by an agent for services rendered in selling his principal's products, commissions on goods sold by the principal, without the agent's knowledge, in the territory in which the agent was to represent the principal, cannot be recovered.

A telegraph company cannot by contract restrict its liability for mistake or delay in the delivery of a message. When the receiving clerk finds difficulty in delivery he is guilty of negligence in not wiring at once to sending office for a better address, and the company is liable.

When the seller has made a false representation, which from its nature might induce a buyer to enter into the contract on the faith of it, it will be inferred that the buyer was induced by it to make the contract, and it is not necessary for him to show that he in fact relied on the representations.

A dated list of personal property, showing merely the price of each item, and signed only by the agent of the seller, in connection with a letter from the seller to the buyer, giving the terms upon which the goods will be shipped, is not sufficient to take the contract out of the statute of frauds.

The Perfect Steam Boiler.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James Hall.

In all well regulated business industries where the raising of steam is an important element, there is generally a desire to have the very best boiler for the purpose, coupled with all of the auxiliaries necessary to quick and successful generation of steam, and the doing of it in the most expeditious and economical manner possible.

How best to accomplish this is a question of the greatest interest, and one on which opinions differ—even among those who consider themselves experts—just as widely as on many other questions of equal importance in the ramifications of a large manufacturing establishment.

However, having in course of a long experience made the acquaintance of a variety of differently constructed boilers, I do not hesitate to give an opinion of what, in my judgment, is the best mode of constructing a boiler to meet the two most important requirements, namely, the quick and economical generation of steam. For these after all are the great desiderata on which the whole question rests.

Following the line of argument usually adopted by logicians of reasoning from the negative to the positive, I would remark first, that I do not consider a small boiler,

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that is one of say 16 feet by 5 feet, an "economical" boiler. Such a boiler may do very well in a "tight place," and where only one boiler is needed for doing the work, with ample capacity to spare, such, for example, as that of driving a small saw mill, a printing machine or the generation of steam for warming buildings, &c.

There are hundreds of such boilers in daily use in densely populated business centres like New York for example; lifting, driving and propelling small pieces of mechanism—dynamos, elevators, &c.—and for which, where space is limited and valuable and valuable because limited, their dimensions have very frequently to be even yet further curtailed.

It is not, however, in respect to cases of this kind that I wish to speak, but of large manufacturing establishments, where space is of no moment, and where it is used on a much more extensive scale, varying say from 200 to 500 or 1,000 horse power.

To put in a number of these small and insignificant boilers to accomplish a work of this magnitude, and to do it economically, is just to prove to a demonstration "how not to do it."

A teamster who is called upon to remove some heavy weight requiring the assistance of a maximum "horse" power does not from choice hitch on a number of small animals, and the smaller the beast the more will he require; but he will use the heaviest and most substantial horses that he can procure; and the heavier and more substantial they are the fewer will he need to accomplish the work which he has in hand.

The illustration may seem simple, or even absurd, but it is none the less applicable to the case in point. Four 100 horse power boilers will do more work, and do it more economically, than double the number of half the power!

The great drawbacks to a small boiler are (1) its deficiency in water surface for the disengagement of the steam from the water, and (2) the reserve of steam is unequal to meet any sudden or unusual emergency, so that constant firing is absolutely necessary. The first drawback will create foaming, and the second priming. Neither of these defects is found in larger boilers when properly worked.

The model boiler, and that best adapted for use in large works, is one about 28 feet long by 7 feet in diameter, with two circular fire-boxes, the first and upper half of each being used for the fire and the lower half for the ashes.

These fire boxes should be about 2 feet 6 inches wide, and the bridge erected about 5 feet or 5 feet 6 inches from the front of the boiler, thus giving a grate surface of, say, 25 feet between the two. The bridge should fill about half of the space from the grate level and the upper part of the fire-box.

Beyond the bridge the boiler should be constructed with a fire chamber extending to the far end of the boiler, oval in shape, and about 4 feet 6 inches wide and 3 feet deep in the centre.

In this chamber, the upper and lower part of the boiler should be connected by a number of tubes about 9 inches in diameter and arranged in twos and threes.

The length of the boiler, minus the space occupied by the fire-box, will admit of twenty-six or twenty-eight of these tubes, and through them the smoke and heat will make their way to the end of the boiler, which should be so gathered in with brickwork as to turn the current through a big flue directly beneath the bottom of the boiler, covering a space about equal to one-fourth of the circumference.

This "bottom" flue should extend to within a foot or two of the front end of the boiler, and then diverge into two side flues, and they in turn should empty into a main flue at the back of the boiler, through which the smoke is conveyed to the chimney stack.

The immense advantages of a boiler so constructed will be obvious. (1) It affords a larger heating surface than any other. The white heat from the furnaces plays directly onto the tubes; while the bottom and side flues afford ample scope for exhausting the heat, instead of letting it escape through the chimney shaft. (2) The water is kept in thorough and continuous circulation between the upper and lower portions of the boiler, securing and maintaining an even temperature throughout. (3) The fire-chamber in which the tubes are located affords space for the combustion of the gases, generated in the furnace, before they can escape to the chimney.

It will be seen, therefore, that a boiler so constructed and possessing such advantages will not only generate steam quickly, but that it will contain a steam and water capacity sufficient to prevent any fluctuation in steam pressure or water level.

This construction of boiler is, moreover, the easiest and most accessible for cleaning.

If the boiler is set at the right pitch, the front end being a few inches lower than the back, the accumulation of mud or other impurities in the water can always be blown off through the valve affixed for the purpose underneath the front end of the boiler, and an internal cleansing may be effected by access through the manhole at the top of the boiler and the one underneath the fire-boxes at the front thereof.

The amount of coal consumed by a boiler of this build will of course to some extent depend upon the quality of the coal consumed and the pressure at which the boiler is worked. I have seen a boiler of this size (28x7 feet) working at 80½ pounds to the square inch, driving a steam engine of 180 horse power with 3 tons (6,720 pounds) of coal per day of twenty-four hours. This was not the experiment of a single day, but week by week, the coal being weighed and kept separate from any other. It will be seen that this consumption of coal is a fraction below 12 pounds per square foot of grate surface per hour; equal to 300 pounds per hour in the aggregate.

It may be asked what kind of draught is obtained from this arrangement of flues, seeing that the smoke and heat have to traverse their way three times through the boiler. In reply to this I may say that I have never seen one of these boilers at work in which the draught was not everything that could be desired, and I have frequently seen the draught so keen that the fire has literally roared and the fire-box doors fairly rattled.

If the boiler and flues are kept clean the draught will be good, the steam will be quickly generated, and no trouble is required in holding it at the pressure required, provided the boiler is not overloaded.

Correspondence.

GREAT BRITAIN.

[FROM OUR REGULAR CORRESPONDENT.]

LONDON OFFICE PAPER TRADE JOURNAL,
1 MITRE COURT, FLEET ST., E. C.,
LONDON, England, May 18, 1895.

Fires everywhere! That is the record just at present, and the fire fiend seems to have a fancy just now for a very full meal of wall papers. The Anaglypta Paper Mill, at Hollins Grove, Darwen, fell a victim to the flames during the night of the 13th. This was a wall paper establishment. About a week before this the works of Walker & Carver, at Pendleton, were burned down. This was also a paper hanging establishment, and a big one. The damage is estimated at a good deal over $100,000. Fire has completely swept a Scotch mill off the face of the earth. The works of the Govenhaugh Paper Company, at Pollockshaws, near Glasgow, had one fair sized machine on browns, but it was a well equipped little mill, doing a good trade. The damage is estimated at $35,000.

This time the Manchester Ship Canal news cannot be left out. It is of real importance to the American trade. The steady way in which the inland port is cutting out Hull so far as imports of pulp are concerned has touched up the Wilson line, which formerly had the cream of the carrying trade between Christiania and Hull. In order to secure the freights once more for the east coast, the Wilson line now announces a reduction on the carriage of wood pulp between the Norwegian capital and the port on the Humber from 7s. 6d. to 4s. 6d per ton. This means that moist pine can now be landed at that port at 42s. 6d. per ton, as against 45s. 6d. at London or Manchester. However, the ship canal has yet the pull, as the proximity of its docks to the mills means a saving in inland carriage of more than the 3s. per ton saved in sea freight via Hull.

It is believed that the imports of wood pulp this month into Manchester will show an immense increase on any previous figures. During April a record was made, no fewer than 52,243 bales arriving from Scandinavia, Canada and Newfoundland. With the exception of the season during which the Baltic ports were blocked by ice, the imports have shown a steady increase month by month.

I mentioned the dissatisfaction in the trade touching the use of foreign paper for Government purposes. The secretary of the Paper Makers' Association has written to the Stationery Office concerning this as follows: "At the recent annual meeting of the Paper Makers' Association there was a strong unanimous expression of dissatisfaction with the conditions upon which British paper makers are asked to tender for the supply of paper to H. M. Stationery Office, and I was directed to draw your attention to the great injustice to British paper makers. As you are no doubt aware, British paper makers are struggling against the competition of Continental manufacturers, who have not only the advantage of having protective tariffs in various forms, but are permitted to carry on their business entirely free from restrictions imposed upon paper manufacturers in this country under the factory acts, &c. I am particularly desired to call your attention to the note attached to the form of tender with reference to the resolution in the House of Commons of February 13, 1891, and to point out that it is impossible to carry it into effect as long as H. M. Stationery Office does not make it a condition that the paper supplied to that office under their contracts shall be the exclusive production of British paper mills. The only result of an attempt to enforce that resolution would be to very seriously handicap British paper makers, as it is impossible to obtain an effective guaranty that foreign paper has been made under the conditions of that resolution. I am to point out, as a matter of fact, that it is well known that Continental paper makers ignore restrictions and run their machinery without cessation, whereas British mills are stopped from midday on Saturday until Monday morning, thus affording their employees time for worship and recreation." He has received the following reply:

"I am desired by the Controller to acknowledge the receipt of your letter calling his attention to the unfavorable conditions under which, in the opinion of the Paper Makers' Association, British paper makers now compete with foreign manufacturers. He recognizes the justice of the contention of the association that it is difficult to obtain satisfactory assurance that paper and other articles made abroad are in every case produced under conditions meeting the requirements of the resolution passed by the House of Commons on February 13, 1891; but with every sympathy with British manufacturers who may for this and other reasons believe themselves to be placed at a disadvantage in tendering for the supplies for the public service, he has—in the absence of any authority to confine the purchases of the department to articles of exclusive home manufacture—no power to insert such a condition in the specifications in the tender for paper."

I have always been a strong believer in the method of electrolysis of salt invented by Col. Trevenen Holland and J. C. Richardson. I have alluded to it once or twice in these columns and prophesied that some day every paper mill would manufacture its own soda and bleach. I hear that the company promoted by these inventors expects to start up its large works near Liverpool very shortly. This electro-chemical company is also under contract to erect plants in paper mills in France and Italy, and in fact at one of the largest paper mills in the former country a plant is almost in working order.

Still another fibre for the paper maker. A company in England has been floated to take advantage of the fibrous nature of Irish peat. It has manufactured cloth from it with a wonderful face and finish, of which the writer has seen samples, and it is proposed to start large weaving sheds in convenient places in Ireland. It also believes that it can tempt the paper maker to cut and come again at the Bog of Allan. Turf may possibly be a good matière première, but then the paper man has a new fibre offered to him about once a week and he is a little skeptical about it. As a matter of fact this fibrous material has been sold long enough for horse litter, and years ago I sent a large sample of it to Olive Brothers, of Bury. Thomas Thornley, their clever manager, reported most unfavorably on it.

The death of Thomas Hogg, of Hope Park, Coldstream, the senior partner of the firm of Hogg & Wood, Coldstream, took place early in the month. The deceased gentleman was a justice of the peace for Berwickshire and a director of Y. Trotter & Son, Limited, Chirnside Bridge Paper Mill, Ayton, Berwickshire.

Notes and Queries makes a little moan about wood paper: "The introduction of wood fibre into the manufacture, its economical production and the attractiveness of the article so produced have combined to tempt the paper maker not to make for 'all time,' but for the day, and only sufficient for the day is the evil thereof. Modern methods of book illustrations require a paper of fine, even surface, with the property of semi-absorption of printers' ink, and the latter requirement has resulted in the very considerable use of what is known as 'half-sized' paper; that is, paper which has but a small proportion of gelatine, or other size, on which the permanent cohesion of the paper depends. Such paper cannot resist the influences of alternate variations of temperature and humidity to which all books are exposed, and thus ultimate decay is possible." This has been said before and often, but there is very little positive evidence that the best class of wood paper is specially liable to decay. I have a book printed in 1801 on unsized wood paper, which has little sign of deterioration about it to-day. Of course common news and common printings go to the deuce quick enough, but they serve their purpose first. Authors abound nowadays who, in justice to their families, should print on the most ephemeral of paper procurable; but if publisher and author feel justified in bidding for immortality, there are lots of paper made even in this degenerate age which will be as good as ever when the New Zealander is mooning over the ruins of London bridge.

Where has not paper got a footing nowadays? In an unsuspected form it turns up, even at the Vatican, it appears. A Parisian journal reveals the rather interesting fact, if fact it be, that the tiara worn of late years by the Pope during those solemn functions in which he takes part is only a cardboard imitation of the great triple crown, made of gold and jewels and heavy with massive ornamentation, which forms one of the Vatican's most precious and sacred treasures. Such is the weight of the real tiara that Leo. XIII. can no longer wear it without danger.

A memorandum prepared by the labor department of the Board of Trade appears in the *Times* of to-day. It records an improvement, that is to say an increase in employment, in almost every industry. Unfortunately, the exception is just in the trades most closely allied to our industry. The printing and bookbinding trades are less well employed than in March. The percentage of unemployed union members is 5.4 compared with 4.9 the previous month.

A writer in *Industries and Iron*, referring to a current rumor that a concession for the sole right of manufacturing and selling paper for cigarettes in the Turkish Empire will shortly be offered for sale in this country, says that this is very probably the case of an exceedingly valuable concession obtained by an English company for the same

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purpose ten years ago which has brought the company into irretrievable bankruptcy, and as a consequence no doubt the concession is once more open for a purchaser. Of course this refers to the Ottoman Paper Company, but, although right in the main, it is a funny way of putting things, since it was most certainly not the acquisition of the concesssion which brought the company to grief, but want of a strong financial backing and a too rash expenditure. The writer surmises that the paper mills now standing idle may be thrown in with the concession, but this is not particularly likely. The engineers who supplied the machinery hold a lien on the works, and would have something to say about any interference with their property. Yet the moral of the thing is that there is a splendid paper mill equipped with absolutely modern machinery and a monopoly of the most merchantable paper in the East, both of which can be snapped up by a purchaser for an old song. Failing an enterprising Englishman, I should like to see an energetic Yankee get hold of this place. "There's millions in it," as Colonel Sellers would have said.

I note that Captain Partington has a case on to-day in the Chancery Division of the High Court of Justice against the Hartlepools Pulp and Paper Company, Limited. I believe that this is for an alleged infringement of one of his pulp making patents.

When this letter starts on its sea journey I shall be nearing the Hook of Holland on my way to the Amsterdam Exhibition, which opened a week ago. Anything there found which concerns the paper trade will be duly noted and reported on in my next letter. ALFA.

WASHINGTON.

[CORRESPONDENCE OF THE PAPER TRADE JOURNAL.]

WASHINGTON, D. C., May 24, 1895.

Heretofore each department of the Government has made its own contracts for the envelopes to be used by it, but under an act of the last Congress the Post Office Department was required to make contracts for the entire needs of the Departmental service. In making an estimate of the cost the officials placed the amount at $80,000. Yesterday Postmaster-General Wilson awarded the contracts for the supplying of envelopes for all of the departments for the coming fiscal year. At the present time there is no means of making a comparison between the old system and the new.

The Government Printing Office is seriously embarrassed at this time by reason of the general failure of the new contractors for Government paper to furnish the necessary paper required for filling department orders for printing, the paper not being equal to the samples on which the contracts were made, and which were approved by the joint Committee on Printing in Congress. Public Printer Benedict says that he cannot understand the attitude of some of the present contractors in entering into paper contracts with the office. He has received various letters from contractors, one of whom said: "I did not expect to receive this contract when I bid"; another said, "If I had known I had to furnish such paper as you require under this sample I would not have bid at less than twice the sum on which my contract is based." Still another said: "There are but four mills in this country which can furnish such paper as your contract calls for, and mine is not one of them."

It has been found necessary to report six of the contractors to the Secretary of the Interior as defaulters under their contract; four others are delinquent in filling their orders, and some of the contractors have not even been able to deliver paper for rejection.

The departments are suffering because of the failure on the part of the contractors as mentioned above; especially is this the case with the Interior and Post Office Departments. The publication of important Congressional work is also delayed for the want of paper, the type pages of which have been ready for weeks.

On August 6, 1894, Justinian Caire imported into San Francisco by rail merchandise which was invoiced as "10 kilogs. paper stock at 25frs., less 15 per cent.; 25 kilogs. paper stock, 32.50frs., less 25 and 3 per cent., and 50 kilogs. paper stock, 60frs., less 25 and 3 per cent.," all of which was assessed for duty by the collector of customs at that port, the first two items at 35 per cent. ad valorem, under paragraph 461, Act of October, 1890, which provides for "manufactures of leather, fur, gutta percha, vulcanized india rubber, known as hard rubber, human hair, papier maché, indurated fibre wares and other manufactures composed of wood or other pulp, or of which these substances or either of them is the component material of chief value," and the last item at 25 per cent. ad valorem.

A protest was entered against these decisions with the United States General Appraisers upon the claim that all of the above specified merchandise should be entered free of duty under paragraph 670, which provides for "paper stock, crude, of every description, including all grasses, fibres, rags (other than wool), waste, shavings, clippings, old paper, rope ends, waste rope, waste bagging, old or refuse gunny bags or gunny cloth, and poplar or other woods fit only to be converted into paper."

An opinion was rendered by General Appraiser Wilkinson on April 16, 1895, of which the following is a brief outline. It was found that the first two items consisted of lumps of dry pulp made from wood or other fibrous material, and the third item was fitering paper torn into pieces about 1 foot long by 4 inches wide.

An examination of the samples showed that the goods were prepared and intended for a use other than paper stock, and the invoice price itself was evidence that the merchandise was not imported for nor was it suitable for conversion into paper.

While he did not affirm the correctness of the classification, he overruled the protest on the finding the "goods were not paper stock, crude, or fit only for conversion into paper." DUMONT.

THE CONTINENT OF EUROPE.

[FROM OUR REGULAR CORRESPONDENT.]

PARIS, May 14, 1895.

The advance in the prices of paper was one of the principal objects in establishing the system of standard papers. If, however, we ask ourselves to-day, more than eight years since its establishment, whether this end has been attained, or whether, at least, a stop has been put by it to the reduction of prices, we must answer very decidedly "No." Neither the "rules" put in force in 1886, nor the newer "regulations" established in 1893, have had this effect; the latter, if anything, have in one sense helped to gradually reduce the price of paper, not only of the standard grades, but of all of the other finer qualities, and they have certainly encouraged underbidding. This must be attributed to the following circumstances:

The new regulations make it obligatory that each sheet, aside from the name of the firm or manufacturer, shall contain a natural watermark (produced by the wet process), indicating its quality or class. In this way the State, as well as all other consumers, is given the certainty and best guaranty that the paper really possesses the qualities indicated by the watermark, for the manufacturer answers for every sheet bearing his firm name. As each year a not inconsiderable number of standard papers is rejected by the Charlottenburg Institute for not being up to the requirements of the class shown by their watermark, a rule has been established that such rejected papers, if they are to be sold to the authorities, must be provided with a dry (artificial) watermark, giving the next lower standard class. Such a rule, however, is much easier laid down than enforced. Not alone would the paper manufacturer who observed this rule, stamping the whole lot sheet by sheet, suffer much loss through waste, wages of employees, &c., but he could, of course, realize for the stamped paper only the price of the lower standard class, and aside from all of this he would run the almost certain risk of injuring the reputation of his firm, for such a lot of standard paper finally passes through the hands of hundreds and thousands of persons, and the dry stamp on it is the exact opposite of a mark of excellence. The consumer who happens to get hold of a sheet of writing paper, the dry stamp of which says plainly that the manufacturer had given his paper a watermark indicating better qualities than those it really possessed, will take this to be an evidence of either incompetency or dishonesty on the part of the manufacturer, particularly if he should repeatedly see such papers from the same firm. As, however, even a very small lot of standard writing paper may be in circulation for years before it is finally consumed, the manufacturer who thus stamped a lot of rejected standard paper would do effectual and lasting injury to the reputation of his firm. To avoid this, the paragraph providing for the dry stamping of paper which is below the standard marked on it is usually ignored.

The officers of the Charlottenburg Institute stated a short time ago that although a not inconsiderable number of standard papers are annually rejected, they have never yet seen any paper bearing the dry mark. These numerous lots of deficient standard paper must, however, be sold, and to private consumers, for the State authorities are of course not allowed to buy such paper unless it is properly stamped. The dealers are well aware of these facts, and bid for such papers even lower prices than those which the manufacturer might obtain from the authorities if he stamped the paper as required. This, however, is by no means the end of the trouble; in fact, it is merely the beginning of it, for the dealers avail themselves of the low prices which they have paid for such defective paper to bear down the prices of the first grade papers, and this old but ever new practice never fails. The difference between the defective and the good standard paper can only be discovered by resorting to the scientific methods of testing, and as defective paper is constantly being produced and made available for reducing the price of good paper in the manner described, prices have fallen to the lowest limit. With this the prices of other papers of good quality have also gone down, for it is evident that, if "standard paper" guaranteed to possess certain qualities can be bought for little money, nobody will pay a big price for paper in which these qualities are not guaranteed by the watermark. That prices are actually very low may be seen from the following quotations taken from a contract made by a Government officer for the delivery of standard papers from Winter's paper mills: Standard 3 a, 72 pfennigs per kilog. (1 kilog. = 2,224 pounds; 100 pfennigs = 24 cents), standard 3 b, 62 pfennigs; standard 4 a, 52 pfennigs, and standard 4 b, 50 pfennigs per kilog.

Prices are much depressed all around, as is evidenced by the many outbursts which find their way into the trade papers, and it is not surprising therefore that so many manufacturers are not at all reconciled yet to the compulsory system of standard paper, and that the opposition against it continues in Germany.

The convention of the Society of German Paper Manufacturers is scheduled to take place in Dresden on June 7 to 9, and the discussion of the question of standard paper forms part of the programme. Other important questions are also to be settled; for instance, the operation and effects of the Sunday law recently established throughout Germany, will be discussed for the first time; resolutions carrying out the views of the World's Congress of Paper Makers, held at Antwerp, are to be adopted, and it is not improbable that by means of an international agreement between all of the paper manufacturers of the European Continent, something beneficial to the paper industry may result. At any rate, there is good reason for looking forward to the general convention this year with great interest, and I shall give a detailed report of everything of value to paper makers, and of special interest to the readers of THE PAPER TRADE JOURNAL.

There has been a noticeable improvement in the demand for cellulose as well as in the paper markets of the Continent. Orders are more frequent, and that gives rise to the hope that the price of paper may recover somewhat.

If the English manufacturers should succeed in their present endeavors to induce the Government to purchase all paper for official use from English mills exclusively it will affect the business of many of the German and Austrian paper manufacturers. Tissue paper, particularly, has so far been imported almost entirely from the Continent, as the few English mills engaged in the manufacture of this specialty cannot compete with the prices of the German and Austrian product.

Few new mills are planned at present; enterprise is limited to the enlargement of some of those already established; but there is likely to be great activity in construction before long, to offset the reduction in production which has been caused by the enforcement of the twenty-four hour Sunday law in Germany and Austria, and which amounts to a reduction of about 10 to 12 per cent. of the total output. In Germany a suspension of work on Sundays for twelve hours, and in some isolated cases of twenty-four hours, had been customary; but in Austria almost all of the mills had heretofore worked seven days in the week. Now, however, the law is more strict in Austria than in Germany, for even the wood pulp mills are compelled to suspend operations over Sunday, so that they have hard times to keep their turbines from freezing in cold winter weather.

In a former letter I mentioned the fact that Dr. Mitscherlich had invented a process for making a very useful sizing substance, which he calls "Gerbleim," from the waste liquor of sulphite fibre mills. As some extensive practical experiments have already been made with this substance I am in position to inform you that it is meeting with much approval. It is a good sizing for paper, making it smoother and giving it a better sound and feel. There is a greater yield of paper, because the "Gerbleim" glues the fibres together. Calculation has shown that the use of "Gerbleim" is no more expensive than other sizing methods. PAPER MAKER.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 1, 1895.

Conditions remain materially the same as reported last week. Business is fast regaining its foothold of stability and substantiality. Prices are gaining a point here and there, summing up a considerable aggregate. Energy and progressiveness are playing a significant cast, and altogether the trade drama is active and interesting—worthy of the attention of any busy continent.

The will of Asa Shuler, the paper felt manufacturer who died two weeks ago in Hamilton, has been admitted to probate. The document disposes of property variously estimated to be worth between $350,000 and $400,000. The deceased wills to his wife, in lieu of her dower, his interest in the Shuler & Beninghafen Block, which consists of the one-half interest in the First National Bank Building and the two storerooms adjoining, estimated value, $125,000; also other property worth $60.000, and $5,000 in cash. To the Christian Church, of which the deceased was a member and to which he generously contributed during life, he bequeathed the parsonage, valued at $5,000. To the Church Extension Society he also gave $5,000, and to the Home Missionary Society $5,000. The balance of the estate is divided equally among his five children. Charles A. and W. B. Shuler were appointed executors without bond.

W. M. Harbison has brought suit at Xenia against the Hagar Straw Board Paper Company for $2,000 damages. The plaintiff operates a flouring mill on Massies creek and claims that since the Cedarville paper mill began operations the owners or their assistants have emptied impure and poisonous matter into the stream, and that this collects at the dam in a dark green scum. The disagreeable odor arising therefrom, he asserts, drives away his customers and renders his flouring business worthless, as well as the water for stock purposes. This is simply one of those aggarvating cases which have arisen frequently during the past two years, usually to the discomfort of the paper mill proprietors. Over in Indiana and in Northern Ohio the mill men have found the complaints to be of more than passing importance. However, there are doubts that the plaintiff will make definite progress in the foregoing case.

Charles Whealen, district manager of the American Straw Board Company, upon arrival home from an extended tour about the mills reports business in a good condition. In Dayton the binders' board department was closed for a time owing to a scarcity of orders, but it is again in operation. Otherwise the volume of orders has been of more than an average run. Strawboard is holding its own with other grades.

Mr. Whealen remained in the city only a few hours, leaving as soon as convenient for New Postage, where the American Casket Company, of which he is a prominent officer, will locate its mill. It was expected ere this that the mill would be running on a nice instalment of orders, but delays are unavoidable. Preparations are in progress, and it will not be long, however, before pulp will be converted into coffins for the post mortem benefit of mankind.

Every paper mill owner in the Miami Valley, his business associates, clerks, employees and their kinsmen ad infinitum send congratulations to THE PAPER TRADE JOURNAL upon its twenty-third anniversary. Certainly 'tis a time honored growth, which bespeaks prestige and power. Success to the autocrat!

There are all sorts of opinions regarding the Supreme Court's decision on the income tax. The local paper trade was intensely interested, the returns in Dayton showing a large number of mill men, so it is intimated. Of course, this was naturally expected, for the record is but one of prosperity, and assuredly no branch of the industry has a better right to claim a lien of priority in this respect. The measure has been bitterly opposed in this section and its defeat has been a matter of favorable comment, in the main. Now, since the law has been considered unconstitutional, some of the mill men are wondering how they may protect the secrecy of their private affairs.

The Xenia paper mill was compelled to shut down for a time recently, owing to a scarcity of coal. However, the suspension was not for long.

A colony has been formed in North Dayton, principally among the employees of the Smith-Vaile shops, for the purpose of settling in one of the Southern States for mutual benefit in the mining and farming industries.

Another Sunday paper has been established in Dayton, viz., *The Press*. Sunday newspapers have met with flat receptions in Dayton, owing to the proximity of Cincinnati. The daily editions of nearly every Cincinnati paper reach here at convenient times, and with greater facilities they are enabled to push others to the wall.

The plant of the Pleasant Valley Paper Company, in Middletown, will be offered for sale shortly by the administrator at public auction. It is reported that an effort will be made to organize a stock company for the purpose of purchasing the plant and again starting it in successful operation. Stock to the amount of $6,000 will be sold, one-third of which is now pledged. The establishment was considered, during its prosperity, to be one of the best in the

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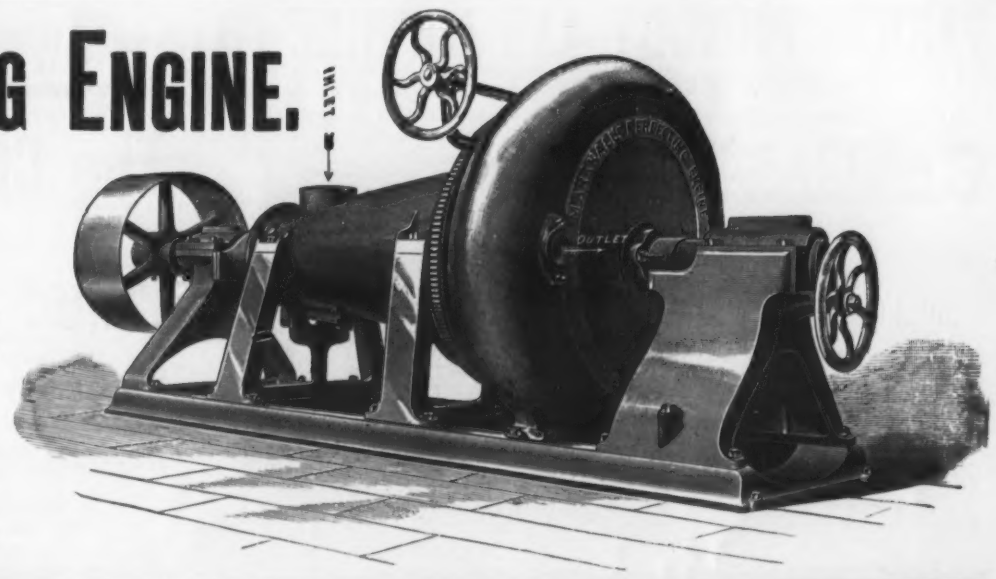

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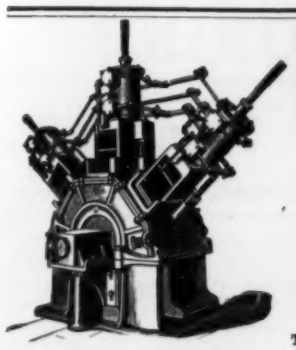

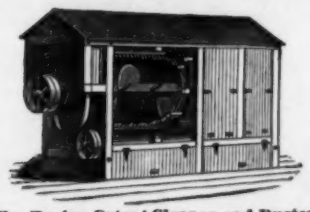

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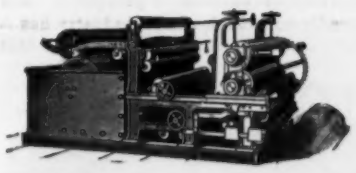

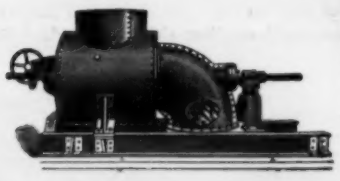

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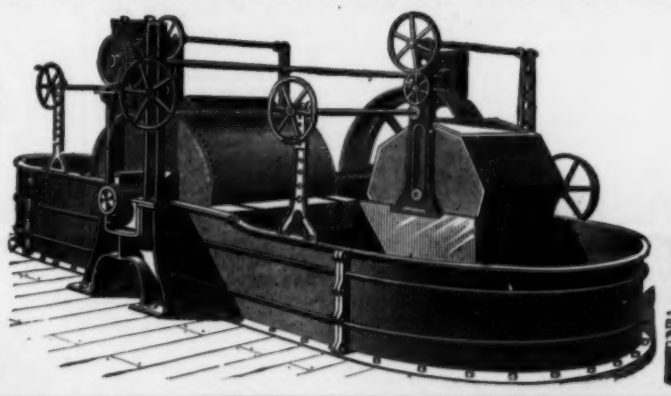
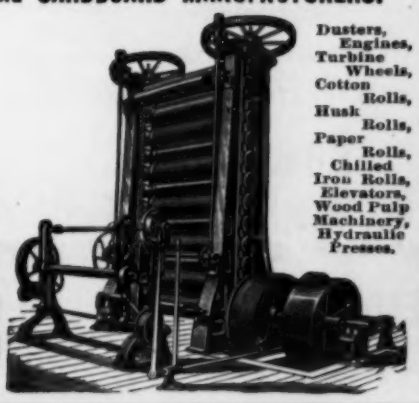
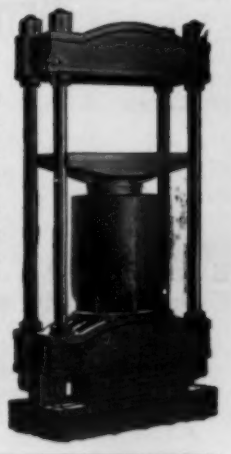




Dusters, Engines, Turbine Wheels, Cotton Rolls, Husk Rolls, Paper Rolls, Chilled Iron Rolls, Elevators, Wood Pulp Machinery, Hydraulic Presses.



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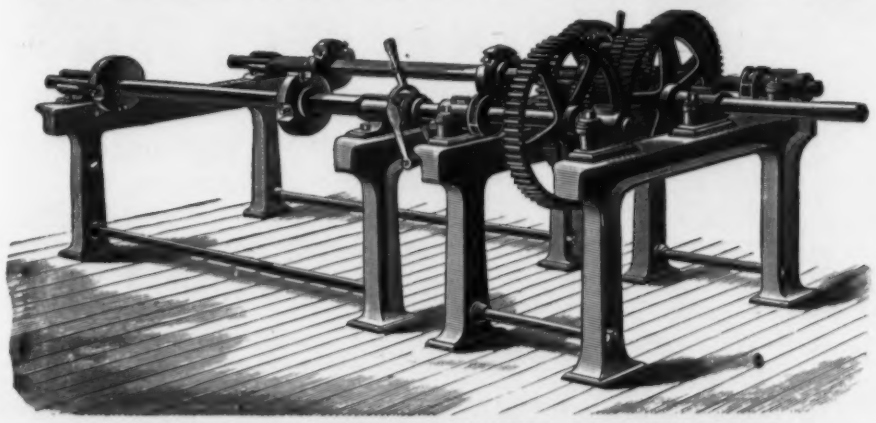

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WHEN YOU WANT ANYTHING IN OUR LINE WRITE US BEFORE ORDERING ELSEWHERE.

DO NOT FORGET

That every ***New England Pulp Grinder*** ever made or sold in this country has been designed, built, and first sold by me; and I am sole owner of the right to use the name "New England" as applied to a pulp grinder, as the United States Patent Office records will show, and no other person is or has ever been interested with me in the manufacture of Pulp Machinery.

All the rights and interest of the Scott & Roberts Company and the New England Pulp Machine Company which were organized for the purpose of selling my pulp machinery were acquired by me more than four years ago, since which time many changes and improvements have been made in the New England Pulp Grinder.

I am prepared to furnish at short notice everything required for making ground wood pulp, including plans and specifications, and estimates for which I will furnish same; and erect the whole, if required, ***guaranteeing a greater production of pulp,*** with a given power and at a less cost for manufacture, than can be done by any other machines; and no pay asked until machines perform as stipulated.

Can furnish any of the leading ***Turbine Water Wheels,*** fifteen styles ***Pulp Grinders, Noiseless Screens, Wet Presses, Sawing Machines, Barkers, Splitters, Pumps, Shafting, Mortise Gears, Pulleys, &c.***

Remember you can have a ***guaranty*** of the ***cost*** of ***your mill;*** also of the ***cost per ton to manufacture the pulp.*** Liberal terms.

I have on hand ***six Pulp Grinders,*** three pockets, to grind wood 17 inches long; and ***eight Grinders,*** heavy pattern, to grind wood 24 inches long; also ***Barkers*** and ***Splitters.***

Many of the old style New England grinders can be rebuilt so as to greatly improve them.

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Don't use an old superannuated machine, nor an inferior imitation, when you can buy a genuine, good Grinder at the low prices at which they are now offered.

I have on hand for prompt delivery six heavy Pulp Grinders, lately made to order, three pockets, to carry Grindstone 18 inches thick, 50 inches diameter; also eight Grinders, heavy pattern, three pockets, to carry stone 25 1-2 inches thick and 52 inches diameter. These will be sold at reduced prices and on extra favorable terms, fully guaranteed in every particular. Also on hand Barkers and Splitters.

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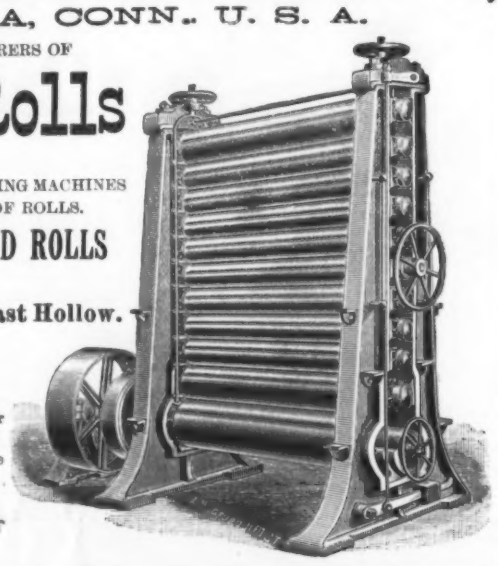

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Housings so made that the rolls may be taken out endwise through frame.

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FINISHING CUTTERS, BUNDLE CUTTERS,
&c., &c., &c.

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Write for full information.

Rewinders.

The only one in the market that will rewind into small rolls, all on one shaft, up to any length.

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THIS CUT SHOWS OUR WINDER SHAFT WITH SEGMENT PARTLY WITHDRAWN.

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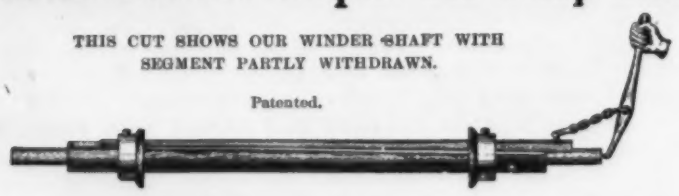

THIS Shaft is designed for making rolls for plugging. Being perfectly round, it gives a roll practically true from the very centre to outside and a true centre for plugging, and a much more solid roll than with other shafts; it may be used on a drum winder, if desired. When segment is withdrawn, which requires but little strain, the pressure is sufficiently reduced to allow easy removal of shaft.

The above particulars mentioned are unquestionable advantages over other types of shafts now in use; the complete satisfaction those already in use are giving attest this fact.

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CONTENTS.

INTRODUCTION.

General Laws of Chemistry; Principles of Chemical Physics; Chemical Arithmetic.

PART I.

General Chemistry.—With a short account of each element and its principal compounds; source, manufacture and properties of such compounds as are used in paper making.

PART II.

CHAPTER I.—**Cellulose.** Its chemical and physical properties, chemical relations and reactions.

CHAPTER II.—**Fibres.** Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bast fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres; growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

CHAPTER IV.—**Bleaching.** General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock; antichlors; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

CHAPTER V.—**Sizing and Loading.** Resin; preparation of size; free alkali; free rosin; alum; analyses of alums; free acid; basic alums; sizing power; resinate of alumina; moss; casein; wax; starch; animal sizing; preparation and use; drying; loading; analyses of clays, agalite, pearl hardening, &c.; use; retention; ash; combined water; effect of alum and starch.

CHAPTER VI.—**Coloring.** Mineral colors; vegetable and animal colors; aniline colors; chemical properties; effect of alum and traces of bleach or alkali in different colors; distinguishing tests; effect of different waters.

CHAPTER VII.—**Water and Water Supply.** Character and analyses of different waters; ground waters; surface waters; river water; artesian well water; hard and soft waters; boiler scale; effect of waters on size and colors; various systems of filtration; use of alum; softening water; self purification of streams; natural filtration; effect of storage; vegetation in ponds; crenothrix; consumption of bleach by waters.

CHAPTER VIII.—**Chemical Analysis.** Description of apparatus and methods for testing the purity and strength of all paper making chemicals, colors, &c.; common impurities and adulterants given; full description of methods of analysis for sulphite and soda liquors, bleach solution, alums, &c.

CHAPTER IX.—**Paper Testing.** Full account of the latest German methods for testing and classifying papers; determination of ash; kind of sizing; amount of sizing; free acid and chlorides; strength; proportion of ground wood; kind and condition of fibres.

CHAPTER X.—**Electro-Chemistry,** with reference to bleaching, manufacturing of pulp, manufacturing of chlorine and soda.

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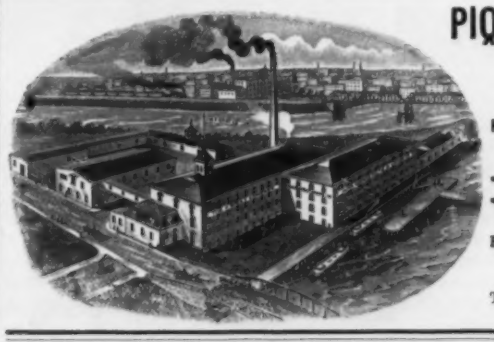

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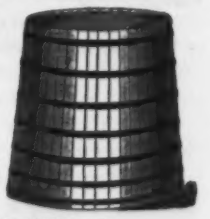

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Also Cardboard Machinery. Hilbers, Staib and Waldron Patent Hanging-Up Machines. Patent Power Reeling Machines for Coated Papers and Cardboard. Embossing Machines, Paper Rolls, Polishing Machines, &c.

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country, with all available conveniences. The trade of the concern was well established and the product was eagerly sought by the trade. Why the effort should fail is not comprehensible. M. V.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., May 30, 1895.

As this is Memorial Day, many of the mills will suspend work at noon.

Local manufacturers have experienced very little change in the business situation during the past week. The improvement in general business has not affected the paper trade to any great degree, but some improvement is looked for if trade in other lines continues to grow.

Fine writings and book papers are moving fairly well on orders of medium size, and little, if any, change in prices is noted.

Manillas and coarser grades of heavy papers are having a fair call, with prices unchanged.

The stock market has undergone no particular change. There is very little demand for foreign rags and the domestic article is limited in movement.

The Power's Paper Company, of this city, and White, Corbin & Co., of Rockville, Conn., have secured the contract for furnishing envelopes for the executive departments at Washington for one year from July 1. These departments will need over 36,000,000,000 envelopes during the year, and the contractors will receive $53,000. The product will probably be divided between the two companies.

The Connecticut River Paper Company has made this return of its affairs: Fixed capital, $150,000; capital paid in, $150,000. Assets—Land, water power, buildings and machinery, $300,000; cash and debts receivable, $17,632; manufactures and merchandise, $59,749; total, $533,382. Liabilities—Capital stock, $150,000; debts, $284,804; profit and loss, $98,578; total, $533,382.

Judge Brothers & Co., stationers and paper dealers in the Whiting Street Building, have decided to remove from Main street to High street on July 1. This is done to obtain more room and to secure a better location. The firm will carry a more varied stock of goods, including fine stationery and office supplies. The Messrs. Judge are industrious young men, who have built up a large business.

The Connecticut River Lumber Company has been at work on last season's supply of logs since the year opened, but the stock is about exhausted, and the boom has just been put in order for the reception of this year's logs.

Frank A. Rivers has been awarded the contract for building the cable towers for the work on the new dam. The cable for carrying material will be strung on these towers as soon as finished.

A back tender employed by the Holyoke Paper Company, named Freelen, had his left arm caught by a pulley one day this week and it was so badly injured that it had to be amputated above the elbow.

About fifty of the girls employed by the L. L. Brown Paper Company, at Adams, imagined that they had a sufficient grievance to induce a strike one day this week and now they are out of a job.

Frank Goss, an employee of the Whiting Paper Company, has been promoted to the position of foreman of the Collins Manufacturing Company's loft at North Wilbraham.

Holyoke has a full fledged candidate for Governor, but no one is betting on his election. At the convention of the Socialistic Labor Party held at Boston early this week, Morris E. Ruther was placed in nomination. Mr. Ruther is a prominent German citizen, a cigarmaker by trade, and an active worker in the interest of his party.

The Holyoke Co-operative Bank will hold its annual meeting on June 12, when the present officers will without doubt be re-elected.

The annual meeting of the Holyoke Paper Company was held yesterday afternoon and the old board of officers was elected.

The weather here is decidedly hot. H.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, May 29, 1895.

There is very little of a sensational nature developing in local trade circles to call for comment.

Some improvement in business is noted, and reports of better business now come from sources which in weeks past did not seem to participate in the current then setting in.

City jobbers are having a very fair trade for the season, although the business is yet made up of small orders. The improved movement is not confined to any one grade of paper, as the several jobbers in the different lines say that trade is very fair.

Book papers are the exception, this line not being in active demand, and yet some manufacturers of book paper state that orders have come to hand quite freely during the past few weeks.

A very favorable fact to note is the statement of a paper manufacturer who said that now he was encouraged to quote a price when he found a buyer, while months ago he was the more anxious to see just how much the buyer would pay for the paper wanted and then he would figure to see if he could meet the offer. From this condition the said paper manufacturer reasoned that it would not be long before he could advance prices.

Frequent inquiry for paper stock is yet noticed, and when prices can be shaded orders are booked, but the demand is not general enough to strengthen the market. Domestics seem to be in good supply at present and that keeps foreign rags quiet.

Col. J. P. Jordan, of Pulsifer, Jordan & Co., was yesterday appointed receiver for the Beacon Lithographic Company of this city. This appointment was made by the United States Circuit Court on petition of Francis H. Raymond, of Cambridge, Mass., acting for himself or for creditors. The Beacon Lithographic Company is a New Jersey Corporation, organized some three years ago to purchase and operate the plant of the Bufford Sons' Lithographic Company, which concern failed two or three years before the property was in the hands of trustees. The Beacon Lithographic Company has not as yet made any detailed statement for the benefit of its creditors, but the company's liabilities are said to be about $130,000, with assets of some $75,000. Its property consists of the real estate and plant at Harrison square, and some personal property. The real estate is encumbered by two mortgages, and two mortgages rest upon certain portions of the personal property, said to be held by local banks.

Colonel Jordan, the receiver, was seen to-day, and in reply to inquiries concerning the probable future of the company he stated that the authority conferred upon him by the court gave him power to operate and continue the business or to sell it. He claimed that it would be necessary to run the business for awhile, as several contracts were in hand which would require some ltttle time to complete. In the meanwhile Colonel Jordan is open to any offer for the plant and business which may be presented, and he seems to think that this is a good chance for any one understanding the business.

Felix Salomon, of New York, and his brother, Jacob Salomon, from Germany, were doing the Boston trade this week.

Other recent trade visitors reported were Hugh J. Chisholm and Charles R. Milliken, of Portland, Me.; Col. F. E. Heath, of Waterville, Me.; ex-Governor Cheney, of Manchester, N. H.; Mr. Finley, of Milton, N. H.; Eugene Daniell, of Franklin, N. H.; H. A. Emerson, of West Henniker, N. H.; Charles S. Mayo, of Lawrence, Mass.; Fred Temple, of Pepperell, Mass.; Edward E. Bill and C. L. Chapin, of Springfield, Mass.; James Logan, Mr. Williams, Henry E. Whitcomb, of Worcester, Mass.; W. D. Judd and Mr. Sturtevant, of Holyoke, Mass.; Mr. Noyes, of Mechanicville, N. Y.; C. A. Whedon, W. C. Clarke and M. B. Belden, of New York.

"Bob" Williams, of C. D. Brown & Co., is on a business trip to Maine this week.

Charles A. Dean, of the Hollingsworth & Whitney Company, is also on a visit to Maine, where the company's big mill is located, but his stay in the Pine Tree State is concerned more with piscatorial sport than paper making, although he may look over the paper mill once or twice, just to see how the machine runs. Business with the Hollingsworth & Whitney Company, as reported from the Boston office, is running along in good shape, orders received during the past few weeks being far ahead of the daily production, and the production of the company runs up above 80 tons a day of manilla paper, to say nothing of wood pulp or paper bags.

John Roberts, the well-known paper manufacturer, of Waltham, Mass., will leave for Europe, sailing from New York on Tuesday next, June 4.

Robert C. McQuillen and his wife, who sailed for Europe last Saturday, received quite a sendoff from their many friends. Notwithstanding the early morning hour of the Cephalonia's departure from the East Boston dock there was a large gathering of ladies and gentlemen in the steamer's cabin to extend to the departing tourists good wishes for a pleasant trip and safe return. Evidence of friendly good will showed itself in floral tokens, and flowers in boxes, bouquets and big baskets sent to Mrs. McQuillan so filled the stateroom that the health of the departing travelers was drunk in the cabin outside. Not until the steamer was out of sight down the harbor did the many friends leave the dock.

Paper valued at $3,719 and books at $2,814 were exported from Boston during the week ended May 24.

Hugh R. Blethen, representing the Scranton Supply and Machinery Company, of Scranton, Pa., left town last week on a Western trip to be gone some ten weeks. Mr. Blethen has his home quarters in Boston, and so this city is the base of his movements. For a few weeks past he has traveled through New England, and from the tenor of his statements concerning the mills one must infer that the paper manufacturing industry of this section is in very good condition.

Mr. Nye, manager of the Cumberland Manufacturing Company, reports that the "Warren" filter plant recently set up at Crocker, Burbank & Co.'s West Fitchburg mill was started up last week with the best results. This filter plant has a capacity of 1,750,000 gallons a day—"pure, clear and sparkling water," said Mr. Nye.

DELESDERNIER.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., May 28, 1895.

The water power troubles here seem to be completely over, and if the present arrangement is adhered to, as it seems probable that it will be, the manufacturers will have little cause for complaint. Notwithstanding the fact that half of the flow of water in the river is being drawn for power purposes, the lake continues to fill gradually and it is not anticipated that there will be any change from present arrangements until the full flow can be used as before. T. W. Orbison, who is in charge of the water regulation, made a report to the Government a day or two ago which embodied the following facts: The amount of water now being drawn approximates closely to 70,000 cubic feet per minute. Between May 1 and 11, inclusive, when water was being drawn for power purposes, the lake rose 4½ inches; between May 13 and 21, when no water was drawn, the water rose 2 inches; between May 22 and 25, when water was drawn again, the lake rose about half an inch. This is an encouraging record, as it shows that the water is steadily rising.

Your correspondent has before referred to the inquiry which was going up from this part of the country for steam engines, and the number of new engines which had been ordered, and were in contemplation. It was stated that the Kimberly & Clark Company had determined to put in a large engine plant at its Appleton mills, and that the Atlas Paper Company, also of this city, would do likewise. It may now be supplemented that these engines have been ordered. The first-named company has ordered from the Filer & Stowell Company, of Milwaukee, a cross compound Corliss of 700 horse power, and the Atlas people have ordered from the same parties a 400 horse power engine of the same kind. These engines are to be delivered in thirty and forty days, respectively. The Atlas Paper Company has also ordered 300 horse power of Root boilers, and the Kimberly & Clark Company has ordered 600 horse power of the same boilers for their new engine plants. The new engine for the Atlas will be located in the present boiler house, which is large enough to accommodate it. The Kimberly & Clark Company will build a boiler house for the new boilers, but will put the new engine in the present mill building. This is done on account of the probability that the company will in a short time rebuild its mills here, and then some other disposition of the engine may be determined upon.

The mill of the Western Paper Bag Company, formerly the Kaukauna Paper Company, will shortly be equipped with steam engines of adequate capacity, which will be brought from the company's mill at Batavia, Ill. The mill is now in operation by water power, but it will do more work with the assistance of some steam.

The Thilmany Paper Company, of Kaukauna, has one steam engine now in operation, but has ordered another. The work upon the addition to the mills of this company, in order to accommodate another tissue machine, is well under way under the efforts of Contractor C. B. Pride. The work of excavating for the foundations was completed last week and that of putting in the foundations themselves is now under way. It is the intention to have the whole thing completed within sixty days.

The Hoberg Paper Company, of Kaukauna, will also put in steam power.

The pulp mill of the Badger Paper Company known as the Little Badger has been shut down and will so continue for the present.

The new steam engine which has been ordered by the Badger Paper Company, as stated last week, will necessitate putting in another boiler, and one of the C. A. Anderson patent boilers has been ordered and will be in place by the time that the engine is ready for it.

It is understood that the Shattuck & Babcock Company, of De Pere, has about decided to put in steam engines, although the number and size have not been determined upon and the order has not yet been given. It is further understood that it is probable that this company and the Atlas and Kimberly & Clark companies will use rope transmission for transmitting the power to the line shafts.

The Patten Paper Company, of this city, has for the last few days been running its steam engine. The engine has been in the mill ready to run for the past two years, but no necessity has heretofore arisen. The company has not quite sufficient boiler capacity, however, to operate the engine to its full capacity, and another boiler will soon be ordered.

Work preliminary to the rebuilding of the mill of the Wisconsin River Paper and Pulp Company was begun last week. The débris is being cleared away and the cracked and broken walls are being taken down. It is expected that the new building to be put up will not be any larger than the old one, but machinery will be put in which will have greater capacity by one-quarter for turning out product. As previously stated, the power house, pulp mill and boiler house were undamaged, which considerably reduces the complications. The rebuilding of the paper mill will be hurried forward with the greatest possible dispatch.

The mill of the Atlas Paper Company in this city has been shut down for several days in order to allow of the rebuilding of the roof, which is being done by O'Keefe & Orbison, and to admit of improvements being made to the machinery. The old roof is now all torn off and the new one has been started. On the cars at the plant is a consignment of machinery from the Beloit Iron Works consisting of driers and calenders. The Atlas people are to add seven top driers to each of their present three machines, and two new stacks of calenders will be put in. This will very considerably increase the output of the mill.

The marriage of Susan Wilson to Nelson E. Funk was celebrated at the home of the mother of the bride last Wednesday evening. The bride will be remembered as having been employed in the office of the Fox River Paper Company, in this city. The groom is a prosperous young business man of Elkhart, Ind.

The new Valley Terminal Railway Company, which has been spoken of previously in these columns, now has three surveying parties in the field, going over the proposed route to be taken by the railway, and it looks as though the new road was on a substantial foundation.

The Marinette and Menominee Paper Company, which has heretofore made only manilla paper, has entered the print field, and will, for the present at least, add this kind of paper to its line. Supt. J. H. McLaughlin is now visiting in Appleton, and says that the mills of this company are doing a very fine business, and that the May shipments are going to break the record.

Mr. and Mrs. J. S. Van Nortwick have just returned from a several weeks' visit to Mt. Clemens.

E. R. Watson, of New York, arrived in the valley last week.

R. E. Buerger and Julius Levy, of New York, have been calling upon the paper manufacturers this week.

Martin H. Nixon is in town.

FOX RIVER.

Experiments With Superheated Steam.

In giving the results of their protracted experiments with saturated and superheated steam, the Alsace Union of Boiler Owners say that, theoretically, it has never been denied that superheated steam should give a higher efficiency than saturated, yet no experiments were undertaken with superheated steam. Subsequently, however, after numerous trials, the oldest engine even was found capable of being safely used with superheated steam, and not only without injury, but more economically than with saturated.

It is also declared by the union that in installing a superheater care is essential that the advantages gained are not lost either by less perfect combustion or by greater radiation losses—the cost of the superheater not to exceed, of course, the saving obtained in coal consumption; the superheater to be connected with the boiler, so that both can be fired from the same surface; and after leaving the superheater the gases should come in contact with the heating surface of the boiler, and, lastly, with the heating surface of the economizer.

Further, these experiments showed that the use of superheated steam does not exclude the use of steam jackets. Though both superheating and steam jackets were used, yet condensation in the high-pressure cylinder occurred. The use of low pressure, 7½ atmospheres, did not give such good results as the use of high pressure, 11½ atmospheres.

New Inventions—LXXXI.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY GEO. DAMON RICE.

Manufacturers of textiles long ago experimented with a fibrous material to take the place of glass under certain conditions. Recently a patent was granted in France for the manufacture of transparent leather, the desired effect being obtained through use of acids. Within a short period a process has been practically perfected for making a translucent substance from wood pulp. It is intended that this new substance shall take the place of glass in skylights or other places exposed to the action of the elements and where the admission of rays of light is needed without transparency. It is getting popular to build extensive machine shops, weave rooms, cotton factories and other manufacturing establishments one story high, so that there need be no hauling up and down of products. Such buildings cover a wide plot of land, and it is necessary that there shall be means for admitting light in the centre. Much of the roofwork is therefore glass.

Varying temperatures, storms, rain and hail seriously affect the best of arranged glass skylighting devices. Engineers and contractors admit that it is practically impossible to make a glass roof or a skylight watertight. Cracks will occur resulting from warping frames; putty will loosen and fall out, leaving an opening between the glass and the framework, while the natural expansion and contraction of the glass will eventually destroy the work of the best glass setter. Leaky glass roofs and skylights have spoiled much valuable stock and caused premature rust on many machines. These are some of the reasons why there are on the market at the present time several substitutes for glass roofing. There is a fibrous fabric which has been lately introduced which seems to have merit, for it is translucent, but not transparent. The leather product is transparent and may some day make a good showing; but the pulp material seems to possess superior advantages.

The great difficulty with glass is its brittleness—it cannot conform to the numerous changes of surrounding parts, and it necessarily cracks or slips from place. The great feature of wood pulp rendered translucent is that it is elastic and can conform itself readily to conditions. Heat, cold and other things which seriously affect glass, cause no trouble to the pulp material. The process of making the translucent pulp is somewhat intricate, although not expensive, as the materials employed for reducing the pulp and rendering it available for lighting purposes are not costly. A white wood is selected, ground, digested and treated with a compound prepared by combining glycerine with acids in the following proportions: 100 parts of glycerine of twenty-six B, 4 parts of picric acid, 3 parts of salicylic acid, 30 parts of boracic acid and 10 parts of fish glue. This mixture is introduced into a tank containing about 900 pounds of the dissolved wood pulp, and the whole is thoroughly mixed and permitted to lie for three or four days, by which time the fibre is well penetrated with the compounds and is ready for treatment in a newly constructed machine. The pulp is put into a tank whence it emerges uniformly through an outlet, where there is an arrangement to govern the flow.

As the pulp leaves the outlet it passes in the form of a sheet into two rubbing rollers, around which there is a leather apron the width of the sheet of pulp. An eccentric imparts a slightly rubbing motion to the rollers, so that the sheet of pulp is smoothed a little. Next the sheet passes between heating and drying devices which receive steam from a pipe. When the sheet arrives at a second set of rubbing rollers it is dry enough to be handled without danger of the fibre separating. From this point the sheet is conveyed into another tank and is drawn around several rollers. The ingredients for rendering the pulp translucent are applied at this stage. The liquor in this tank consists chiefly of distilled water and bichromate of potash. A glass cup containing an alcoholic solution of tortoise shell feeds its contents by drops into a receptacle in which is a mixture compounded from sulphuric acid and rosin. Valves are arranged to deposit the contents of the top reservoirs in desired quantities to the main tank, where they unite and form a liquor having the necessary properties for producing the desired effect upon the pulp sheet. As the liquor weakens it is drawn off into a lower tank and is used over again after strengthening. The mechanism revolves a winding arrangement which constantly draws the sheet through the machine and over cylinders heated by steam. Brush cylinders remove loose matter, and the sheet is ready for the next operation, which consists in unwinding it from the roll, spreading it out upon a wide, long table in an airtight compartment in which the light of the sun is

not permitted to enter and then applying a coating of the alcoholic solution of tortoise shell with a brush and coating the whole with white varnish. When the sheet is removed at the end of twenty-four hours it is white and translucent. It will admit the rays of light, but is not transparent, thus making it valuable in places where painted windows are used. If struck with a stone or hammer it simply bends a little, but never cracks. It is very flexible.

In cotton mills, where shuttles are frequently shot out of the loom, the windows are covered with screens of wire, thus obstructing the light. A flying shuttle has no effect upon the pulp material. Many windows in skylights and glass roofs are broken with stones. The wood pulp window stock is stone proof. In fact, about the only way to destroy this pulp substance is to use a atchet or similar instrument and break it up intentionally. The stock is shaped of the right dimensions for a frame by sawing it out. No diamond cutting tool is needed. The pane can be nailed in place or set in with putty or in dry places with glue. It is very light in weight, so that freightage is saved; and the framework of the roofs need not be so heavy. The only estimates of cost given as yet are that the material is cheaper than glass.

Increasing the Power of Water Wheels.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By M. W. Danielson.

Turbine water wheels are most popular for general use, and modern mills are usually equipped with them; but there are yet many country mills which either do not require a very great degree of power for the wheels or have engines in conjunction, and these, in some cases, employ the overshot wheel. Anyway, I have observed numerous overshot wheels in practical use, and have also noted that some of them are quite poorly adjusted. Several water mills which I have visited have been in such condition. The owners in one or two instances did not know that it was possible to make a poor waterfall a good power, and that half of the quantity of water which they were using could do the same work.

Many mill proprietors could make improvements in their water power. There are mill men who have spent thousands of dollars in erecting a steam plant to run their mills in case of low water, who would have done better had they spent the money on a first-class dam, flume, wheel pit and wheel.

The way to get the most from a given sized wheel is to have everything right from the start. The raceway and the source of water supply come first.

Where springs flow generously artificial ponds or reservoirs are built; but these are expensive, and even when built correctly often fail to give satisfaction.

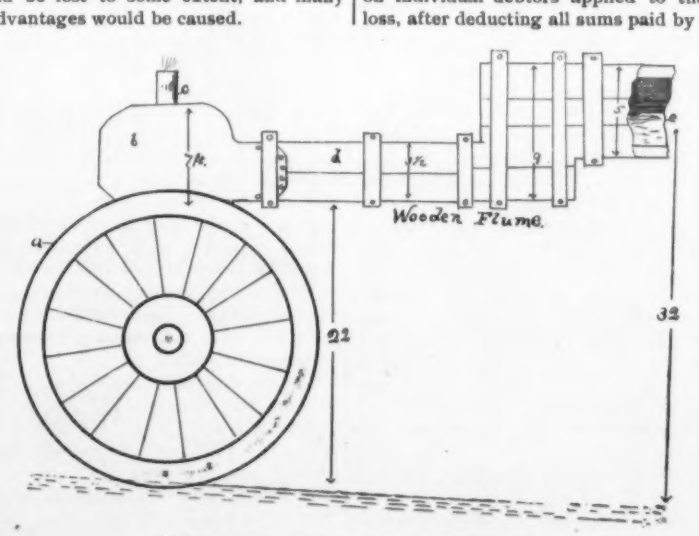
The accumulation of dried leaves, broken branches of trees and other débris makes a severe obstruction to all waterways—in the country especially. Where a locks and canal company runs things the matter is different, for the company employs men to keep things in order.

The owner of the suburban mill often lets the raceway take care of itself until the obstructions hinder the flow of water. He then sends out a gang of men to begin at the source and remove the accumulation all along to the fall. This mode of cleaning is all right if conducted regularly. There should be a fixed time to perform the work, and it should then be done. Improved in this way, the water power would have many advantages. A larger quantity of water would pass, and a greater pressure could be obtained, a larger body of water being laid before the wheel. It is necessary, of course, to have a good, secure wheel pit to sustain the heavy pressure. A wheel pit of stone is best, as it is more durable; but a substantial wooden pit is sufficient. With a good flume and pit it is necessary to have a good wheel, otherwise the whole thing will be a failure, particularly on a small stream.

The shaft transmitting power from the turbine to the stones or rolls should be made of the right size. It should rest on stiff rigging and immovable stands, which is an important point in saving power, as well as oil and cost of repair. The wheel house and the mill should set as closely together as possible. The stability of shafting is a point to notice.

Everyone who has had the care and management of wheels is well aware that there is always a liability of more or less trouble from badly running shafts. Sometimes it may be the fault of the bearings, sometimes of the wheel, and frequently the fault is with neither, but arises from imperfections in the alignment and stability of the shafting. Recently a wheel lost power in some mysterious way. The shafting was untrue, and that caused it. So we lined the shafting up, putting it in the best condition we could. It was almost incredible the way that shafting was out of level. Some of the timbers had shrunk, some had bent under the weight upon them, throwing the shafting out to such an extent that the men thought that the level must be at fault, and only proving it to be level would convince them that such a change could be made in a line of shafting in such a few months. Then came the saving, which proved to be nearly 10 per cent. of the power, and it will be found to be the case in nine out of every ten wheel plants that an overhauling of the shafting after the plant has had time to season will result in a saving of friction.

Now for the wheel itself. I have seen users of the overshot make the mistake of not using the whole fall. Suppose the fall to be 35 feet, the canal a mile in length and the fall from the dam to the wheel 6 feet. I have seen the water on the gate no higher than 2 feet. In this case the fall would be lost to some extent, and many disadvantages would be caused.



Improved System of Running Overshots.

As a remedy gravel may be dug from a hillside and piled up toward the site in order to get a high dam or bank, so that the water may be raised so high in the ditches that what is not used must go over the head dam on the canal. In this way the miller would get the full benefit from the water, and the overshot would have the same advantage as a turbine. The diagram is given to show an arrangement adopted by a millwright to get full power from his wheel. The wheel *a* is 22 feet in diameter. The flume is 3½ feet at *d* and 5 feet at *e*. The portion of the flume over the wheel at *b* is iron, and the air pipe *c* is attached thereto. The fall is 32 feet.

If the fall was 30 feet an overshot 20 feet in diameter would be high enough. A wheel of this size should be 3 feet wide. The tailrace should be made wide enough to allow a free passage of water from the outlet. The tailrace of a 3 foot breast wheel should be 4 feet wide or more with a good fall. The upper as well as the under or down stream canal should always be kept as clear from dirt as possible. The best time to clean them is in summer, when the water is low and warm. A dam for an overshot should be made as straight as possible, as also should the down stream canal.

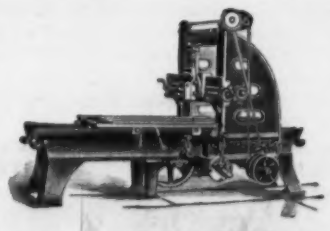
Whenever it is possible there should be built on the up stream a large pond or reservoir to catch the water when it is plentiful and hold it for a supply in dry weather. Water could be stored up at night and on Sundays when the mill is not running, and there would always be a supply on hand.

A Credit Insurance Decision.

The paper and paper stock trades will be interested in the fact that the United States Circuit Court of Appeals handed down an interesting decision on Wednesday affirming a judgment for $5,358.38, recovered last October in the United States Circuit Court in the case of Charles F. Wood & Co. against the Mercantile Credit Guarantee Company. The case was a novel one, involving the construction of a policy of credit insurance. The defendant is one of a number of companies organized within the last few years for the purpose of insuring merchants against losses by insolvent debtors. Few actions have been brought upon these policies, and the case just decided is said to be the first of such actions which has ever reached a court of last resort in this country or in England. It is at least the first in which an opinion construing one of these policies has been reported.

The plaintiffs are diamond importers, doing business in this city. The defendant is a New York corporation. The chief point in dispute in the case was as to the meaning of the word "loss" as used in the policy. The policy provided that the company insured the plaintiffs "against loss sustained by reason of the insolvency of debtors" of a certain preferred class, with various limitations as to the amount of loss as to which the company should be liable on any one debtor. The company claimed that the word "loss" as used in the policy was equivalent to indebtedness, or the amount which the debtor owed at the time of his failure; that the limitations as to individual debtors are limitations of the amount of indebtedness to be considered in adjusting the losses; and that the amount to be paid by the company could not exceed the limit of indebtedness of the various debtors, less a proportionate part of the amount paid by the debtors in settlement. The plaintiffs claimed and the Court of Appeals decided in effect that the word "loss" in the policy was used in its ordinary business sense; that the limitations on individual debtors applied to the net loss, after deducting all sums paid by debtors in settlement, and that the company was liable for the amount of this net loss.

In a short article on the subject of measuring water in steam *Engineering Mechanics* says that the engineer who can forward some simple and effective method for performing this work will render a good service to all steam users. The salt test is unreliable. No accurate method of measurement exists. The percentage of wet steam ranges from 3 to 14 per cent., according to common understanding, but this is a loose statement. A careful observer and writer on this point says: If it were known with any accuracy why steam is wet the difficulty of testing it would be diminished, but nothing is certainly known on the subject. There is, of course, very good reason to believe that quantities of water are thrown up into the steam space by the uprush of the steam bubbles breaking through the surface, but then the water ought to fall back by its gravity in any quiet part of the boiler.



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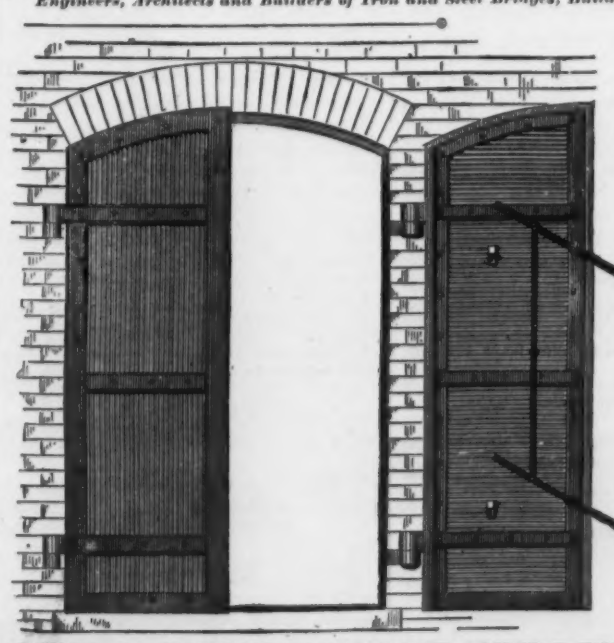
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Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED MAY 24, 1895.

An. Colors..	1,086	$66,419	Paper	545	$24,299
Alum	—	—	Steel Pens..	4	2,398
Alum's Cake	—	—	Stationery .	11	556
Bl. Powders	838	12,018	SlatePencils	500	940
Soda Ash...	5,360	14,082	Clay	—	4,941
Soda, Caus.	406	4,291	J'te B'ts,&c.	—	—
Soda, Sal....	140	304	P.Hangings	22	1,076
Soda, Hypo.	25	409	Pap'r Stock	2,454	25,784
Ultramarine	45	1,672	TerraAlba.	378	1,351
Books.....	346	41,767	Waste.....	75	12,877
Newspapers	338	9,943	Wood Pulp	—	—
Engravings.	117	11,371			
Ink.....	385	1,788			
Lead Pencils	4	305	Totals...	12,979	238,786

Imports General Merchandise for the week ended May 24, 1895..... $6,551,864

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO MAY 29, 1895.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales.	Bales.	Tons.	Tons.	Bales.
Antwerp.....	2,199	3	803	....	9,575
Bordeaux.....	181	....	....	....	850
Bremen.....	831	725	2	....	2,321
Bristol.....	....	...	....	....	1,733
Buenos Ayres.	520	....	....	....	....
Calcutta.....	....	...	....	....	5,471
Cen. America.	180	....	....	....	....
Christiania....	....	....	85	....	....
Copenhagen..	...	....	105	....	1,098
Dundee.....	....	....	1	....	613
Fiume	....	....	34	....	....
Geestemunde.	412	....	....	....	537
Genoa.....	898	....	....	....	2,671
Ghent.....	90	40	....	....	895
Glasgow.....	123	58	....	....	49
Hamburg.....	5,654	229	989	....	1,528
Havre.....	....	....	....	....	782
Hiogo.....	6,544	....	....	....	....
Hull.....	2,606	40	1,716	....	4,132
Kobe.....	10,578	....	....	....	....
Leghorn.....	1,041	....	....	....	185
Liverpool.....	637	195	....	....	9,190
London.....	2,840	1,136	....	....	3,424
Marseilles....	155	....	80	....	1,597
Newcastle....	....	221	....	....	2,107
Rosario.....	....	....	....	....	98
Rotterdam....	1,901	....	67	....	1,121
Stettin.....	557	....	86	....	1,089
Trieste.....	199	....	45	....	....

NEW YORK IMPORTS.

FROM MAY 22 TO MAY 29, 1895.

Paper Stock.

S. Goldman, Rhynland, Antwerp, 20 tons chemical fibre.

G. Hamilton, Marengo, Antwerp, 10 tons chemical fibre.

Castle & Gottheil, by same, 6 tons chemical fibre.

James Pirnie, by same, 455 bs. manilas.

Lewy Brothers, by same, 39 bs. rags.

Jessup & Moore Paper Company, Savina, Genoa, 260 bs. bagging.

E. Hatton & Co., Senator Iken, Geestemunde, 145 bs. rags.

F. Salomon & Co., by same, 147 bs. rags, 537 bs. bagging.

Castle & Gottheil, Bohemia, Genoa, 241 bs. rags.

E. W. McClintock, by same, 25 bs. rags.

James Pirnie, Hathor, Hamburg, 234 bs. bagging.

F. Salomon & Co., Patria, Hamburg, 307 bs. rags, 55 bs. papers.

Lewy Brothers, by same, 194 bs. rags, 240 bs. bagging.

S. Goldman, Scandia, Hamburg, 81 bs. rags, 100 tons chemical fibre.

F. Bertuch & Co., Francesco, Hull, 30 tons chemical fibre.

F. Bertuch & Co., Galileo, Hull, 10 tons chemical fibre.

Train, Smith & Co., by same, 187 bs. bagging.

James Pirnie, by same, 96 bs. bagging.

Horace Dutton & Co., by same, 68 bs. manillas.

James Pirnie, La Champagne, Havre, 100 bs. manillas.

James Pirnie, Cevic, Liverpool, 177 bs. bagging.

Perkins, Goodwin & Co., by same, 148 bs. bagging.

J. W. Mason & Co., by same, 147 bs. manillas.

J. Libmann & Co., by same, 25 bs. rags.

Burgass & Co., Burgundia, Marseilles, 200 bs. manillas.

Train, Smith & Co., Amsterdam, Rotterdam, 131 bs. bagging.

Castle & Gottheil, Sicilia, Stettin, 41 tons chemical fibre.

Paper.

Parsons, Green & Co., Chateau Lafitte, Bordeaux, 10 cs.

Henry Lips, Stuttgart, Bremen, 6 cs.

American Tobacco Company, La Gascogne, Havre, 31 cs.

Drucklieb & Co., by same, 11 cs.

Kupfer Brothers, Rhynland, Antwerp, 47 cs.

R. Sulzberger, by same, 10 cs.

G. Gennert, by same, 65 cs.

Dingelstedt & Co., by same, 21 cs.

L. C. Wagner, by same, 7 cs.

Photo Material Company, by same, 15 cs.

C. S. Abbott, by same, 23 cs.

Kaufmann Brothers, Germanic, Liverpool, 15 cs.

W. H. S. Lloyd, by same, 1 cs. hangings.

Henry Lindenmeyr & Sons, Patria, Hamburg, 24 cs.

L. De Jonge & Co., by same, 39 cs., 2 bs.

R. F. Downing & Co., Galileo, Hull, 35 cs.

L. De Jonge & Co., by same, 8 cs.

Marcus Ward & Co., by same, 5 cs.

H. S. Leclercq & Co., by same, 4 cs.

Dennison Manufacturing Company, Campania, Liverpool, 18 cs.

T. C. Stratton, by same, 30 cs.

B. & O. Meyers, by same, 8 cs.

G. W. Sheldon & Co., Sicilia, Stettin, 49 cs.

B. Lawrence Stationery Company, Paris, London, 5 cs.

F. J. Emmerich & Co., Normannia, Hamburg, 2 cs. hangings.

Hermann Hug, Dania, Hamburg, 3 cs.

C. D. Stone & Co., Marengo, Antwerp, 34 cs.

Steglich & Baese, by same, 34 cs.

Henry Lindenmeyr & Sons, by same, 68 cs.

Eimer & Amend, Amsterdam, Rotterdam, 8 cs.

J. C. Drucklieb & Co., La Champagne, Havre, 10 cs.

IMPORTS of Rags and other Paper Stock at the Port of New York for the month ended May 31, 1895, from the following named Ports, showing Quantities from each Port.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales	Bales	Tons	Tons	Bales
Antwerp	57	—	97	—	2,603
Bristol.....	—	—	—	—	427
Dundee.....	—	—	—	—	139
Fiume.....	—	—	14	—	—
Geestemunde.....	412	—	—	—	537
Genoa.....	269	—	—	—	360
Glasgow.....	—	25	—	—	—
Hamburg.....	1,451	55	160	—	843
Havre.....	—	—	—	—	200
Hull.....	273	—	103	—	1,755
Leghorn.....	83	—	—	—	—
Liverpool	43	48	—	—	3,047
London	676	228	—	—	1,529
Marseilles	—	—	—	—	882
Rosario.....	—	—	—	—	98
Rotterdam.....	28	—	—	—	220
Stettin.....	156	—	56	—	546
Totals.....	3,448	356	430	—	13,196

Special List of Imports of Paper Stock at the Port of New York for the month ended May 31, 1895.

Importers.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales	Bales	Tons.	Tons.	Bales
Atterbury Bros.....	68	....	....	....	....
Bateman, H. O.....	....	....	56	....	....
Bertuch, F., & Co...	....	....	95	....	....
Burgass & Co.....	....	....	....	....	298
Castle & Gottheil ...	342	62	66	....	167
Darmstadt & Scott..	22	....	....	....	....
Davey, W. O., & Son	....	....	....	....	111
Devoy Bros.....	....	....	....	....	70
Downing, R. F., & Co	26	....	....	....	....
Dutton, H., & Co....	....	....	....	....	393
Goldman, S.....	81	....	206	....	....
Hamilton, G.....	....	....	10	....	....
Halton, E., & Co ...	183	....	....	....	....
Ireland, A.....	....	48	....	....	....
Jessup & Moore Paper Company.....	53	....	....	....	360
Lewy Brothers.....	1,148	....	....	....	464
Libmann, J., & Co...	115	....	....	....	....
Mason, J. W., & Co..	....	....	....	....	2,942
McClintock, E. W...	45	....	....	....	....
Merchants' Despatch	75	....	....	....	....
Overton, R. H., & Son	6	....	....	....	251
Perkins, Goodwin & Co.....	120	....	....	....	148
Pirnie, James.....	55	25	....	....	5,733
Ryder, C. S.....	....	160	....	....	....
Perry Ryer & Co ...	26	....	....	....	....
Rose, S. J.....	39	....	....	....	....
Salomon, F., & Co..	721	55	....	....	679
Stratford, G.....	....	....	....	....	225
Train, Smith & Co..	329	....	....	....	2,077
Totals	3,448	356	430	....	13,196

BOSTON IMPORTS.

FROM MAY 23 TO MAY 26, 1895, INCLUSIVE.

Paper, &c.

Wm. Guild & Co., Catalonia, Liverpool, 5 bs. periodicals.

Frost & Adams, by same, 3 cs. drawing paper.

J. L. Fairbanks, British Queen, London, 1 cs. paper.

Dennison Manufacturing Company, Scotsman, Liverpool, 9 bs. tissue paper.

F. Abrams, Norse King, Antwerp, 4 cs. paper.

Paper Stock.

Train, Smith & Co., Angloman, Liverpool, 169 bs. manillas.

C. A. Cheney, Scotsman, Liverpool, 71 bs. manillas, 40 bs. cotton waste.

Horace Dutton & Co., by same, 19 bs. and 194 coils manillas.

J. B. Moors & Co., by same, 15 bs. manillas, 41 bs. waste paper.

Horace Dutton & Co., Sagamore, Liverpool, 157 coils manillas.

Horace Dutton & Co., British Queen, London, 361 bs. rags.

Train, Smith & Co., Norse King, Antwerp, 240 bs. rags, 145 bs. flax waste.

W. F. Corne, by same, 25 bs. rags.

Geo. W. Millar, by same, 95 bs. manillas.

Wood Fibre.

R. Helwig, British Queen, London, 558 bs.

Sizing.

Train, Smith & Co., Angloman, Liverpool, 73 bags.

C. A. Cheney, Scotsman, Liverpool, 132 bags.

Thomas Groom & Co., Catalonia, Liverpool, 85 bags.

E. W. McClintock, by same, 125 bags.

Bleaching Powder.

J. L. & D. S. Riker, Sagamore, Liverpool, 282 cks.

J. L. & D. S. Riker, Scotsman, Liverpool, 362 cks.

J. L. & D. S. Riker, Angloman, Liverpool, 165 cks.

A. Klipstein & Co., Norse King, Antwerp, 73 cks.

G. W. Sheldon, by same, 24 cks.

E. E. Rice & Co., by same, 10 cks.

J. B. Moors & Co., by same, 60 cks.

Refined Alkali.

J. L. & D. S. Riker, Scotsman, Liverpool, 90 cks.

Soda Ash.

Warren & Co., Angloman, Liverpool, 74 cks.

Warren & Co., Scotsman, Liverpool, 37 cks. and 200 bags.

Linder & Meyer, by same, 53 cks.

A. Klipstein & Co., by same, 24 cks. and 100 bags.

Warren & Co., Sagamore, Liverpool, 73 cks.

Soda Crystals.

Warren & Co., Sagamore, Liverpool, 140 bbls.

Warren & Co., Scotsman, Liverpool, 280 bbls.

Warren & Co., Angloman, Liverpool, 280 bbls.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED MAY 25, 1895.

Paper.

F. Weber & Co., Lisnacrieve, Hamburg, 10 cs.

Paper Stock.

Order, Carthaginian, Liverpool, 309 bs. old bagging.

Soda Ash.

Brown Brothers & Co, Ohio, Liverpool, 20 cks. and 1,024 bags.

Pennsylvania Salt Manufacturing Company, Carthaginian, Liverpool, 200 bags.

Soda Crystals.

J. I. Keefe, Ohio, Liverpool, 654 pkgs.

Bleaching Powder.

J. L. & D. S. Riker, Carthaginian, Liverpool, 182 tcs.

Bichromate of Potash.

J. L. & D. S. Riker, Carthaginian, Liverpool, 40 cks.

EXPORTS of Paper, &c., from New York for the Week Ended May 28, 1895.

BOOKS, to Trebizond, 1 cs.; Sandwich Islands, 1 cs.; Argentine Republic, 15 cs.; Bremen, 4 cs.; Brussels, 1 cs.; British Honduras, 1 cs.; British East Indies, 15 cs.; British Australasia, 1 cs.; British West Indies, 26 cs.; China, 2 cs.; Cuba, 8 cs.; Chili, 2 cs.; Constantinople, 3 cs.; Central America, 6 pkgs.; Glasgow, 1 cs.; Hong Kong, 1 cs.; Hamburg, 16 cs.; Japan, 1 cs.; Liverpool, 7 cs.; London, 14 cs.; Mexico, 233 pkgs.; San Domingo, 1 cs.; Mannheim, 1 cs. Newfoundland, 1 cs.; Venezuela 11 pkgs.

PAPER, to Newfoundland, 22 cs.; New Zealand, 114 cs.; Antwerp, 52 cs.; Argentine Republic, 132 cs.; Brazil, 110 cs.; Berlin, 5 cs.; Bristol, 47 pkgs.; Bremen, 1 cs.; Bilboa, 2 cs.; British Honduras, 22 pkgs.; Cuba, 329 pkgs.; British Australasia, 561 pkgs.; British West Indies, 4 cs.; Central America, 7 pkgs.; Havre, 5 cs.; Liverpool, 45 cs.; London, 154 pkgs.; Santander, 1 cs.; Rotterdam, 2 cs.; San Domingo, 82 pkgs.; Newcastle, 30 pkgs.; Newfoundland, 30 bdls.; Southampton, 1 cs.; Sandwich Islands, 52 pkgs.

STATIONERY, to Antwerp, 3 cs.; Argentine Republic, 8 cs.; Brazil, 4 cs.; Berlin, 1 cs.; British Australasia, 7 cs.; Cuba, 4 cs.; British West Indies, 2 cs.; Central America, 12 cs.; Dutch West Indies, 7 pkgs.; Danish West Indies, 3 cs.; Ecuador, 2 cs.; Hamburg, 1 cs.; Havre, 2 cs.; London, 109 cs.; Mexico, 66 cs.; Peru, 1 cs.; Philippine Islands, 1 cs.; Southampton, 21 cs.; Sandwich Islands, 2 cs.; Uruguay, 1 cs.; Venezuela, 18 cs.

SANDPAPER, to Venezuela, 1 bale; Antwerp, 13 bdls.; British West Indies, 3 bdls.; Cuba, 3 bdls. Copenhagen, 7 bdls.; Hamburg, 6 bdls.; Havre, 8 bdls.; London, 49 bdls.; Mexico, 6 bdls.; Rotterdam, 2 pkgs.; Sandwich Islands, 6 cs.

TWINE, to Argentine Republic, 6 bs.; Cuba, 1 bs.; Hamburg, 24 bs.; Mexico, 2 pkgs.; Venezuela, 4 bs.; Sandwich Islands, 9 bs.; Brazil, 28 bs.

PASTEBOARD, to Cuba, 40 bdls.; Mexico, 8 cs.

WALL PAPER, to Berlin, 3 cs.; London, 10 cs.; Mexico, 1 cs., 5 bs.

TAGS, to Brazil, 2 cs.; Bradford, 1 bale; British Honduras, 1 cs.; British Australasia, 5 cs.; Glasgow, 5 cs.; Mexico, 2 cs.

LABELS, cases, to San Domingo, 2.

PAPER BOXES, cases to Mexico, 9.

CARDBOARD, cases, to New Zealand, 5.

CARDS, cases, to Brazil, 1; Mexico, 3.

STRAWBOARD, to Cuba, 15 pkgs., 8 cs.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	2,091	$13,772
Paper, cases.....	588	7,258
Books, cases.....	119	7,129
Stationery, cases.....	274	14,080
Rosin, bbls.....	6,183	17,498
Totals.....	9,195	$59,727

Exports General Merchandise for the week ended May 28, 1895..... $7,200,542

HYRDAULIC

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NEW YORK: SATURDAY, JUNE 1, 1895.

By the emphatic vote of 157 to 92 the lower house of the Prussian Diet passed, on May 21, a resolution urging the Government to take steps in favor of an international settlement of the currency question with the view of securing international bimetallism. Such a vote has a much more potent influence upon German constituencies than a similar legislative act would have upon our people, and, moreover, reflects more thoughtfully formulated opinion, hence its importance to the cause of international bimetallism. There is no doubt that sentiment abroad is growing in favor of the bimetallic movement. Englishmen remain coy on the subject, yet enough opinion breaks loose to show that they are not at all indifferent to the trend of events even while professing to be little influenced thereby.

So far as the United States are concerned, the chief obstacle to bimetallism comes from our own people, or a section of them, who are smitten with with the silver craze, and are therefore not amenable to reason or facts. Silver monometallism is impracticable for a great trading nation like ours; it would handicap us in every market in the world. We have long labored under the disability of a currency inferior to the world's money of account, and we should not plunge deeper into that abyss. Bimetallism, that in which gold and silver circulate together and are freely exchangeable with each other, is apparently the only solution of our currency difficulties; but even that, admirable as it is, we could not sustain alone. International agreement is the true way to settle the matter, and toward this events seem to be tending slowly but surely. We are not advocates of extremes, except they may be imposed by dire necessity. Free silver is one extreme of the financial dilemma, and an absolute gold standard without interchange is another. The principle involved is like the liquor issue—intemperance at either end. There is a just mean which is neither licentious nor rigidly prohibitive. So with the currency question. It can and must be adjusted to the varied requirements of commerce.

In an interview with a well-known member of the paper trade, published in another column of THE PAPER TRADE JOURNAL, much emphasis is placed upon the necessity of enlarging and extending the export trade of American paper makers. The home market is well provided for, and now the large surplus, which is growing year by year, must find a market abroad if healthy conditions of manufacture are to be maintained. It is a fact that foreign paper makers have for years been carefully studying the export problem; not only studying it, but putting into practical use many ideas for its extension. They have investigated possible markets to ascertain what class or classes of goods are best adapted to them; they have distributed information freely, and sent abroad agents capable of talking about their products and placing them advantageously before buyers. The results have been good. Meanwhile American paper makers have done little or no hustling for outside trade, appearing to believe that the home consumption would be all that they could meet for a long time at least. The folly of this attitude is now becoming apparent and its results are heaped up difficulties in the path of the would-be exporter, who is confronted everywhere with a strong and determined competition, even in those markets which, by locality and institutions seem his by right, and in which he should now be established. It is never too late to correct a commercial mistake, however, and we would also advise that attention be paid to the thorough, painstaking method whereby some, at least, of our rivals for foreign trade seek and secure what they are after. There is a way of reaching such trade, and our product will be in demand if it is only sought. There was a time when the exports of American made paper maintained a steady level and the business was confined to one or perhaps two different grades. Now the exports show greater diversity and gradual increment. This change could be made more apparent and more of our paper could and would be sold abroad, much to the advantage of the home market, if paper makers only availed themselves of mediums which can command attention, and pursued the course of seeking outlets rather than that of syndicating and forming trusts.

PAPER STOCK IMPORTS.

The imports of rags and other paper making fibres—jute butts excepted—at the port of New York during the month ended May 31, as reported, amounted to 16,900 bales and 430 tons, the difference in quantities compared with the corresponding month of 1894 being an increase in rags of 21 bales, in old papers a decrease of 134 bales, and in manilla stocks a decrease of 4,035 bales. There was no wood pulp imported during May, and of chemical fibre 157 tons less than the April imports were brought in. The appended tabulation shows the quantities of paper making materials of the kinds mentioned which were reported as having been imported during the month of May for the last five years:

	1895.	1894.	1893.	1892.	1891.
Rags.....bales.	3,448	3,427	15,990	8,280	6,579
Old Papers.....	356	490	1,000	555	1,333
Manilla Stocks..	13,196	17,231	7,488	25,419	6,837
Wood Pulp, tons.	....	....	....	....	....
Wood Fibre.....	480	508	1,904	3,734	1,199

The arrivals from the different ports were as follows: Antwerp, 57 bales rags, 97 tons chemical fibre, 2,603 bales manillas; Bristol, 427 bales manillas; Dundee, 139 bales manillas; Fiume, 14 tons chemical fibre; Geestemunde, 412 bales rags, 537 bales manillas; Genoa, 269 bales rags, 360 bales manillas; Glasgow, 25 bales old papers; Hamburg, 1,451 bales rags, 55 bales old papers, 160 tons chemical fibre, 843 bales manillas; Havre, 200 bales manillas; Hull, 273 bales rags, 103 tons chemical fibre, 1,755 bales manillas; Leghorn, 83 bales rags; Liverpool, 43 bales rags, 48 bales old papers, 3,047 bales manillas; London, 676 bales rags, 228 bales old papers, 1,529 bales manillas; Marseilles, 882 bales manillas; Rosario, 98 bales manillas; Rotterdam, 28 bales rags, 230 bales manillas, and Stettin, 156 bales rags, 56 tons chemical fibre, 546 bales manillas.

Watermarks.

BY DANDY.

Whew! It's ninety-odd in the shade, and the thermometer has not yet begun to get in its big licks. Paper men wish that the prices of paper would follow the course of the mercury and go up a point or two.

A well-known member of the paper stock trade was riding in an elevated car this week, and was seeking amusement and instruction in the pages of his morning paper. The train drew up at a station, and two ladies rose to depart. The paper stock man looked up from his paper, and, as he supposed, he saw that one of them had dropped an envelope.

The chivalrous young man picked it up, yelled like an Indian at the guard, and rushing out to the platform threw the envelope to the ladies from the then moving train. Then he went back to his seat conscious of having performed a good deed and being somewhat puffed up thereby.

Imagine his horror, when a gentleman sitting near him touched him and said quietly: "That was my envelope you threw off the train." Apologies followed, the owner of the envelope remarking: "It was of no value. It only contained a couple of my cards."

The p. s. man has now given up restoring lost articles to their seeming owners, because he realizes that he might have started complications which, to say the least, might prove embarrassing. Supposing instead of an envelope that it had been a baby or a grip or any one of a thousand and one other things! It gives a person the horrors to think of it.

There was a "Harmony" dinner in town the other night. It was given by a talc manufacturer, who incidentally is also president of the New York Central, and one of the guests was an ex-president of the American Paper Manufacturers' Association. I'll gamble, however, that neither talc nor paper was discussed during the evening's session.

A manufacturer of high class tissue papers was complaining about the prices at which French makers of copying papers were selling their goods. "The only way I can figure it out," he said, "is that somebody is undervaluing his goods, and I believe it is being done." There's a chance for the Custom House people and also for the domestic makers of copying paper to do some investigating.

Trade Talks.

James M. Fitzgerald, New York—I have quite a volume of business, and yet at the same time I am a little uneasy about it. It is almost impossible to establish any uniform prices on goods. The purchasers are making the prices, not the sellers. I have just overhauled my business, comparing three months of this and the three corresponding months of last year. Things did not look right, and I wanted to find out how I stood. Now I have made a rule to do it. The result of this investigation was that I found I am about 450 tons ahead of last year in my sales. That takes into account my paper stock business, as well as my paper business, and these figures were drawn from my cartage account. There is a tendency for all of the trade to be uneasy, and there is good reason for this general feeling. I gain this information from men with whom I talk. I have never really given the matter much thought, in order to arrive at any definite conclusion, as to what produced or produces this condition of things, yet there is one thing which everybody falls right back upon, and that is overproduction. The news market is strong, and of course a few large mills can make an impression on the market. You can take other grades where there are a great many mills busy, and they cannot seem to pull together at all, but are cutting each other's prices, and generally demoralizing the market. This tendency seems to exist more among the mill men themselves than among the men in the trade. They come into the market to sell goods, and if one man doesn't talk to suit them they go to another. There is no doubt that a great deal of trouble also comes from brokers, who can handle goods at 1 or 2 per cent., and in case of a break in the market they have no stocks to depreciate, no responsibilities to take and no risks to run, while men who are in the business and who have an established store, a trade to serve and stock to dispose of must suffer the consequences of competition from this class, and must not only protect their own interests, but the interests of the mills. If the broker makes only $5 he is satisfied, for with no capital involved and no expenses to meet he is just so much ahead. I do not know of any business which is to be compared with it unless it be that of the grocery store and the peddler who hawks the same groceries from house to house in a push cart. It is the same with the twine business. A fellow throws a string of balls of twine over his shoulder, and if he makes only a profit of 10 cents in a day he says to himself that it is better than nothing, for he is sure of a bed and something to eat. Now, business is increasing, and I have no doubt that it is going to be better, but in any event, and especially in the present state of business, we want a bigger export trade for our surplus paper. I have not considered as to how this should be brought about, but that is what we are in need of to-day. That is our life. It seems to be our only hope. It will be the salvation of the trade. I am not growling. I am not complaining. I have given up going around with a sour look on my face. There is too much of that. I have a good business here and I have been connected with the paper trade for twenty-seven years and I simply let the past alone and try to adjust my business to the conditions of the present. When I can't make it pay a profit any longer, I shall simply sell it out or close it up and go back into the country and buy a few acres of land and go to tilling the soil. I shall surely be certain of a living then. Now I am glad to meet you gentlemen occasionally and give my views. Every other man in the trade, manufacturer or dealer, should be willing to do the same. I like to know other people's ideas upon these matters, and I consider that it is a good way to give out opinions to you gentlemen of the press, and let you sift them out and publish them. This interchange of views should be of some account and possess some value, and I am sure that it would lead to a better understanding. I think that another trouble during the hard times has been with the press—I mean the trade press. I don't mean your paper, but one or two other publications for which I do not subscribe, but which are sent here. They brought on a great deal of this trouble by making reports which at least were, I know, exaggerations of the state of business and the trade. Now these same papers are trying to undo the injury they did by spending their time in denying the reports and trying to bring back that which they were largely instrumental in driving away—confidence. Now in view of all this I have a suggestion to make which should, if carried through, be of material benefit to the trade. I have never heard that any paper dealer has ever before made such a proposition, or that it has been discussed by the trade. I will state it to you and wish you would take it up and ask dealers and others their opinion in regard to it. Some grades of paper since mechanical wood came to be used in the manufacture of paper are notoriously poor. When mechanical wood first came to be used I bought a lot of paper at my own price, and after it had been in my store for some four months one of my clerks discovered some trouble with it, and when I came to examine it I found that I could run my hand into the pile as far as my wrist, even though there was a ton or more of paper on top of it. When I pulled my hand out it was full of sawdust. My clerk thought that the rats had eaten it, but it is a fact that if you put such paper away in a damp place it will rot and crumble away. That was the matter with this lot and that is the trouble with a great deal of the paper used by the Government at Washington in its agricultural and other publications. There are tons upon tons of publications in the vaults of the Government which have turned yellow, and which, because Representatives and Senators have not availed themselves of their franking privileges and distributed them to their constituents, are actually in a state of decay. Many important documents are printed upon such paper, and the result will be that in a few years they will be useless. It is a shame and a disgrace for the Government to use such paper. The same is true of the paper used in many of the modern novels, many of which I have bought at one-half cent and sold at 1½ cent per pound to a country newspaper, to be distributed by it among its subscribers as souvenirs, or to be used as premiums in increasing its subscription list. Now I come to my suggestion. The bids for paper advertised by the Government each year are a farce. They are notoriously dishonest. The Government rarely receives the paper called for in the contracts, and samples of which have to be submitted. I have been all through the departments, have seen the paper and know what was paid for it; and I know of one case where 500 tons of paper which would not stand the chemical test for mechanical wood went through, and I could go and buy the same quality of paper at 35 per cent. less than the Government paid for it. That is not right; the Government needs good paper, and it should get what the bids call for. I have given this subject attention, and I would suggest that instead of the Government advertising for prices of paper, that it call for bids for the best paper that can be manufactured for a certain price. We are sorely in need of a standard, and the Government should set it, and that standard should be a standard for the whole trade to follow. The Government should not pay less than 4½ cents a pound for its paper, but it is now paying about 1 cent less than that. In other words, the Government should set the price and the manufacturer the quality. Such a standard once established should meet the approval of the trade and be maintained, and it should be the standard for the paper trade of the whole country to follow. Morally it would be a good thing, for it would do away with all of the dishonesty which is now practiced. It would elevate the trade. The trade needs a standard of paper, and the Government should start it by calling for it in its contracts; and such a standard should accomplish the regulation of a general standard for all paper manufacturerd in this country.

Changes, Removals and New Firms.

The publication of *Around the World*, New York, has been suspended.

The *Times*, Hannibal, Mo., has suspended publication.

Brockport, N. Y., has a new paper called the *Advertiser*.

The *News*, Northville, Mich., has suspended publication.

San Francisco, Cal., has a new seriocomic paper called *Chic*.

H. P. Warren has opened a wall paper, &c., store at Fairlee, Vt.

The publication of *Storiettes*, New York city, has been suspended.

The *Forum*, Farmington, Wash., has suspended publication.

The *News*, Gardiner, Me., has been purchased by Chas. Heywood.

The *Sentinel*, Iowa Falls, Ia., is a new paper edited by S. C. Platt.

Baldwin & Graham, stationers, &c., St. Helena, Cal., have sold out.

John J. Sheehan has started in the wall paper business at Lewiston, Me.

Frank J. Farrell has started in the wall paper business at Pittsfield, Mass.

The *Morning News*, Benton, Mich., has temporarily suspended publication.

The *Optimist*, Jamestown, Kan., is a new paper published by Mary L. Burton.

E. E. Marshall & Co. have opened a wall paper, &c., store at Plainfield, N. J.

T. E. Bligh, dealer in wall paper, &c., has been succeeded by Frank R. Bligh.

O. M. Whyland & Son have opened a wall paper, &c., store at Chatham, N. Y.

A. C. Roush (Mrs. Geo. Roush), stationer, &c., Earling, Ia., has been succeeded by Dr. Waltzer.

Mather & Combs, printers, Nashville, Tenn., have been succeeded by J. W. Combs, Jr.

Walker & Palmer, publishers of the *Democrat*, Warren, Pa., have sold out to D. W. Donohue.

The *Tribune* Press Company, Hammond, Ind., has been incorporated. Capital stock, $10,000.

The *Financial Industrial Register*, Nashua, N. H., has been incorporated. Capital stock, $25,000.

The *News* Publishing Company, Hot Springs, Ark., has been incorporated. Capital stock, $15,000.

The New Charter Publishing Company, Santa Cruz, Cal., has been incorporated. Capital stock, $10,000.

J. E. Wadley, Waycross, Ga., is offering his book store for sale, and will retire from the business.

New York city has a new college magazine called *The Bachelor of Arts*, edited by John Seymour Wood.

The *Press*, Washington, D. C., is a new paper which is run on the co-operative plan by a company of printers.

The Bradley-Garretson Company, Brantford, Ont., is to be incorporated, with a

capital stock of $75,000, to do a subscription book publishing business.

Geo. W. Decker, stationer, &c., Port Jervis, N. Y., has sold out to Geo. Hopp.

The Kalamazoo *News* Company, Kalamazoo, Mich., has been incorporated. Capital stock, $50,000.

Alexander Balfour & Sons, paper manufacturers, Philadelphia, Pa., have been succeeded by Dill & Collins.

The Habbin Electrotype and Engraving Company, Detroit, Mich., has been incorporated. Capital stock, $10,500.

Burt B. Blasser, publisher of the *True Republican*, Washington Springs, S. Dak., has sold out to W. F. Bancroft.

Harris & Jones, bookbinders, San Diego, Cal., have dissolved partnership and J. A. Harris continues the business.

The *City and State*, Philadelphia, Pa., is a new paper published by Herbert Welch. It poses as the champion of the people.

London & Banks, booksellers and stationers, Ardmore, I. T., have dissolved partnership and J. M. London continues the business.

J. Madison Drake, publisher of the *Daily Leader*, Elizabeth, N. J., has sold out to J. Madison Drake, Jr., and has retired from the publishing business.

Tuskegee, Ala., has a new monthly magazine called *The Pi*, published by Messrs. Mann & Thornton. It is devoted to the interests of the printing fraternity.

H. L. Schaum and B. W. Henshaw, booksellers, stationers, &c., Lawrence, Kan., have dissolved partnership. The business will be continued by B. W. Henshaw.

M. J. Dillon, late of the Tonawanda (N. Y.) *Evening News*, has bought the plant of the *Sun*, Lockport, N. Y., and will use it in issuing the *Evening Times*, Geneva, N. Y.

The *Democrat*, Dresden, Tenn., has been purchased by Mrs. A. C. Lewis, editor and publisher of the *Enterprise*, who will consolidate the two papers.

L. S. Gooding, Ardmore, Ind. Ter., has bought of H. T. Joy, trustee, Hillsboro, Tex., for 50 cents on the dollar, or $1,399.85, a stock of books and stationery, removing the same to Ardmore.

The *Penny Press* Publishing Company, Minneapolis, Minn., has filed its second set of articles of incorporation. The officers are Peter Sutherland, president; Thos. E. Bishop, vice-president; Alden J. Blethen, Sr., secretary, and Geo. S. Canfield, treasurer.

The *American Silk Journal* Company, of New York city, has been incorporated to conduct a general and publishing business and to print newspapers or trade journals. Capital, $6,000, and directors, L. R. Trumball, of Paterson, N. J.; C. R. Clifford and W. M. Lawton, of New York city.

Hunter, Rose & Co., Limited, Toronto, Ont., have been incorporated to do a printing, binding and stereotyping business by Geo. MacLean Rose, Daniel Alexander Rose, Atwell Fleming, Thomas P. Phelan and William Manson Rose. The new company succeeds the firm of Hunter, Rose & Co., Toronto, Ont. Capital stock, $50,000.

The Nicholson Printing and Manufacturing Company, Richmond, Ind., has been incorporated with a capital stock of $15,000, to sell blank books, paper boxes, office supplies, and to carry on a printing, publishing and bookbinding business. The directors are: Timothy Nicholson, John H. Nicholson, Howard Campbell, P. W. Smith and M. H. Dill.

The Mineral Wells Printing Company, Galveston, Tex., has been organized with the following named officers: H. D. Arnold, president; W. H. Gaines, vice-president; Jasper B. Story, secretary; Jim Tom Story, Jr., business manager and treasurer; Jim Tom Story, Sr., editor. The plant will be equipped with new steam power presses.

Failures.

Application has been made for the appointment of a receiver for the *Call* Printing and Publishing Company, Lincoln, Neb.

The Miller Printing Company, St. Paul, Minn., has made an assignment to Thomas H. Girling. The schedule of assets and liabilities has not been filed.

The plant of the *Mail*, Brandon, Man., has been sold to satisfy claims for rent, taxes, &c. The subscription list has been purchased by the *Times*, Brandon, Man.

Geo. M. Holcombe, assignee of O'Brien Brothers & Co., announces that he will sell at public auction on July 26 the mill property and plant located at Lambertville, N. J., and belonging to that firm.

Ellen Colgan and Charles H. Sterling, who carried on business under the name of the Commercial Folding Box and Paper Company, 53 Crosby street, New York, assigned yesterday to Joseph J. McDonald, giving preferences as follows: American Straw Board Company, $176; Joseph J. McDonald, $550, and William J. Plant, $1,500.

The schedules of Reuben Freeman, printer, New York, who recently assigned, have been filed. They show liabilities of $35,385 38, nominal assets of $47,896.57 and actual assets of $26,108 36, of which the stock represents a nominal value of $22,508.40 and an actual value of $13,262.50. Included in the assets are thirty-seven sets of electrotype plates leased to the Optimus Printing Company, the title of the goods remaining in the assignor until fully paid for. One of the accounts due the assignor is by James Grange, a bookbinder, who went to smash and left town a number of months ago. The claim is for $4,231.96, and is valued at $850. Another claim is against the Eastern Book Printing Company for $8,004, and is set down as worthless. Among the creditors whose claims are over $100 are Bingham Brothers & Co., $405.34; J. H. Crockett, $196.98; Bulkley, Dunton & Co., $367.29; Charles Craske, $619.70; Crawford & Co., $300; Empire City Electrotype Company, $138 55; R. J. Freeman, $165.97; Franklin Book Binding Company, $304 66; William Knoepke Pamphlet and Binding Company, $1,299 05; Henry Lindenmeyr & Sons, $1,190 85; C. M. McClellan, $7,540.38; Molleson Brothers Company, $102 48; F. A. Ringler & Co., $688.11; Charles Sibley, $178 92; Vernon Brothers & Co., $8,122.91; Williams & Co., $140.40; Frank T. Morrill, $500; G. H. Morrill & Co., $770.10; George Munro, $871.31; Hubley Printing Company, $115.59. There are also due the Babcock Printing Press Manufacturing Company $11,000, rent of printing presses under leases by which the title of goods was vested in the lessor until rent was fully paid, and in addition to this the same company holds notes of the assignor for $16,000, given for rents of presses for a period subsequent to the date of the assignment, and the memorandum accompanying the schedule states that if the assignor fails to pay such rentals the lessor shall have the right to confirm said lease and sue and recover any amount due thereof with interest and costs. Mr. Freeman has also contingent liabilities of $3,556.33.

In Town.

W. A. Russell and A. N. Burbank, Boston, Mass.; Charles G. Price, Minsi, Pa.; William Whiting, Holyoke, Mass.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, May 31, 1895.

THE MONEY MARKET.—Trading in the stock market was light, but most of the moving shares closed at higher figures. Call loans on stock collateral were dull and easy at 1@1½ per cent. Demand for time loans did not improve, and the market was still over supplied with money on active mixed collateral. Quotations by banks are 2 per cent. for thirty to sixty days, 2½ per cent for ninety days to four months and 3 per cent. for five to seven months. Commercial paper is only in moderate supply. Quotations are 2¼@3 per cent. for sixty to ninety day indorsed bills receivable, 3@3½ per cent. for four months' commission house and prime four months' single names, 3¼@4 per cent. for prime six months' and 4@5 per cent. for good four to six months' single names. The demand for choice notes is active. Business in both sterling and Continental bills was very light, partly owing to the practical suspension of arbitrage dealings in stocks. The condition of the market was without special change. Posted rates were $4.88 for sixty days and $4.89 for sight. Actual rates were $4.87@4.87½ for sixty days and $4.88@4.88½ for sight.

THE PAPER TRADE.—The formation of the combination of news paper manufacturers is progressing, and the executive committee had a session this week. There is little in the market out of the ordinary course of events. There is a fair volume of trade, but none of the grades shows any material changes.

JUTE BUTTS.—The market is quiet and spot prices are too high to interest paper makers.

WOOD PULP.—There is a continued strong call for Ground Wood, and low water in certain quarters has restricted production. Prices range from $15 f. o. b. at pulp mill upward.

WOOD FIBRE.—There is a fair business being done in Chemical Fibre. Domestic Bleached Soda is quoted at 2½@2¾c., as to quality. Domestic Sulphite is quoted at 1⅞@2¾c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3⅛@3.90c.; Unbleached, sulphite process, —@3.15c.; Bleached, do., 3⅛@4c.; Bleached Straw Pulp, 3.80c. This week there were imported at this port 217 tons of Chemical Fibre, being 36 tons from Antwerp, 100 tons from Hamburg, 40 tons from Hull and 41 tons from Stettin.

FOREIGN RAGS AND PAPER STOCK.—The demand is light, and where other than store lots are wanted, importers are bringing the goods out only on order. Imports for the week aggregated 4,269 bales and 217 tons, being 1,321 bs. rags, 55 bs. papers, 217 tons chemical fibre and 2,893 bs. manillas. Ports of shipment and quantities are as follows: Antwerp, 39 bs. rags, 36 tons chemical fibre and 455 bs. manillas; Genoa, 266 bs. rags, 360 bs. manillas; Geestemunde, 292 bs. rags, 360 bs. manillas; Hamburg, 512 bs. rags, 55 bs. papers, 100 tons chemical fibre, 474 bs. manillas; Hull, 187 bs. rags, 40 tons chemical fibre, 164 bs. manillas; Havre, 100 bs. manillas; Liverpool, 25 bs. rags, 472 bs. manillas; Marseilles, 200 bs. manillas; Rotterdam, 131 bs. manillas; Stettin, 41 tons chemical fibre.

DOMESTIC RAGS.—The call for domestic rags is quiet, and prices are about the same; say, 3@3¼c., for Whites; 2¼c. for Soiled Whites and 1¼c. for Thirds and Blues.

BAGGING, &c.—No sales of Gunny are reported and the nominal price is 1.02½c. The manilla imports for the week aggregated 2,893 bales, being 455 bs. from Antwerp, 360 bs. from Genoa, 537 bs. from Geestemunde, 474 bs. from Hamburg, 164 bs. from Hull, 100 bs. from Havre, 472 bs. from Liverpool, 200 bs. from Marseilles and 131 bs. from Rotterdam.

OLD PAPERS.—There is a moderate demand for Old Papers. We quote: No. 1 Hard White Shavings, 2½c.; No. 1 Soft White do., strictly free from wood, 2.05c.; Soft White do., ordinary, 1⅞@2c.; Old Ledgers, 1⅞c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1@1½c.; Mixed Shavings, No. 2, ¾c.; Extra No. 1 Manillas, 90c.; No. 1 Manillas, ordinary, 75c.; No. 2 Manillas, 60c.; Light Book Stock, 60c.; Folded News (overissues), 50@55c.; Mixed Papers, 35c.; Commons, 25@30c.; Straw Clippings, 45c.; Binders' do., 45c.

STRAW.—Straw is not very plenty and is steady. We quote: Long Rye, at 65c.; Short Rye, at 45@50c.; Wheat, at 40@50c.; Oat, at 40@50c.

ROSINS.—The market was firm. Supplies were small and arrivals were taken up as soon as secured. We quote: Common to Good Strained, $1.90@1.92½; E, $1.95 @1.97½; F, $2; G, $2.10; H, $2.25; I, $2.50; K, $2.70; M, $3; N, $3.15; W G, $3.20.

CHEMICALS.—There is no material change in the market for paper makers' chemicals. Bleach remains in its former position, with spot well cleaned up. Alkali is moving in a very fair way. Caustic Soda is firm and Sal Soda is in good demand. During the week there have been sales of Bleach at 1.80@1.85c.; 10 tons Soda Ash at 1½c.; Caustic Soda 2.10c., and Alkali, 1½c.

CHINA CLAY.—No arrivals to hand during the past week, consequently the stocks of the extra grades are getting scarce and held firm at $17 per ton. Other grades, however, are in better stock, and are selling freely at $11@13 per ton for arrival and $14@16 per ton for jobbing parcels.

TWINES.—Twines are in good demand. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¾c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—The Anthracite market is quiet, and the output during June will be restricted to the quantity decided on for May.

EDWIN BUTTERWORTH & CO.
MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing.
Wood Pulp, Moist and Air Dry Pulp,
Soda and Ground Pulp,
83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street,
JAMES PIKNIE, A. S. DEMAREST, } Managers.

WATERBURY
Felts and Jackets,
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
Adapted to *every* grade of paper, from the *finest* to the *coarsest*.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are *unequaled for durability*.
For WRITING and LEDGER PAPERS
We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.16	@	$0.21
Flat Caps, superfines	11½	@	14
Flat Caps, fines	11	@	13
Flat Caps, engine sized	7	@	9
Blotting, American	8	@	12
Blotting, English	17	@	....
Book, super sized and calendered	5	@	8
Book, super sized and tinted	5	@	8
Book, extra machine finish	5	@	....
Book, machine finish, low grade	4½	@	5
News	2¾	@	3
Poster	3	@	....
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double mediums	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9½
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.85
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	60	@	80
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¼	@	6½
Manillas, No. 2	5	@	6
Manillas, Bogus	2¾	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	55	@	60
Hardware, light colored, No. 1	4¼	@	....
Hardware, No. 1, glazed, tarred	4½	@	....
Hardware, No. 1, glazed	4	@	....
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	30.00	@	40.00
Strawboards, air dried, No. 1, ℔ ton	47.50	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	24.00
Straw Wrapping, basis, 15×20, 15½ lbs., 30 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	65	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	52
24×36, from 24 to 26 lbs. ℔ rm	....	@	48
22×32, from 24 to 26 lbs. ℔ rm	45	@	....
20×30, 21 lbs., ℔ rm	..	@	34
20×30, from 14 to 17 lbs. ℔ rm	26	@	....
16×22, from 12 to 13 lbs. ℔ rm	33	@	....
18×28	....	@	24
15×20, 10 lbs. ℔ rm	....	@	17
15×20, from 7 to 8½ lbs. ℔ rm	....	@	13
14×18	....	@	12
12×16	....	@	11
11×15	....	@	10
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12x18	..	@	14
14x20	....	@	18
Card Middles, ground wood	5¾	@	6¾
Card Middles, long fibre wood	8¾	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

Woolen Rags.

Comforter Stock	....	@	....
White Woolens	8	@	....
Blue Gray Stockings	7	@	8
White Stockings	10	@	12
Blue Flannels	6	@	....
Reds, old	5½	@	6
Reds, new Shirt Clippings	15	@	16
Mixed Softs, free of Carpets	4½	@	5½
Seamed Cloth	....	@	3½
Skirted Cloth	2½	@	....
New Cloth Clips	7	@	9
New Satinets, clean stock	1¾	@	1½
Satinets, old	65	@	75
Seams	1	@	1¾
Delaines, stripped for extract	1½	@	2
Blankets, Woolen	2½	@	2¾
Wool Carpets	1½	@	2
White Linseys	5	@	6
Mixed Linseys	75	@	1

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	4¼	@	....
Mill Assorted Whites	3¼	@	3¾
Unbleached Muslins	4½	@	4¾
City Whites, No. 1	3	@	3¾
New Seconds, light	2¼	@	....
New Seconds, dark	1¾	@	2
No. 2 Whites	¾	@	1.15
Cotton Canvas, No. 1	3	@	....
Linen Canvas, No. 1	....	@	2¾
Country Mixed, free of Woolens	60	@	....
Seconds (City)	....	@	....
Colors, ℔ 100 lbs	....	@	....
Manilla Rope	....	@	2½
Manilla Rope, tarred	....	@	....
Gunny Bagging, No. 1	1.10	@	1.20
Mixed Bagging, No. 1	⅞	@	1
Burlap Bagging, No. 1	1.10	@	1.15
Kentucky Hemp Bagging	....	@	....
Tar Shakings	1	@	....
Hemp Twine Stock	....	@	....
Jute Waste	¾	@	1¼

Shavings and Old Paper.

White Collar Cuttings	3	@	....
White Envelope Cuttings	3¼	@	....
Hard White Shavings, No. 1	2¾	@	3
Soft White Shavings, strictly free from wood	2.15	@	....
Soft White Shavings, ordinary	1¾	@	2
Mixed Shavings, part white	1	@	1½
Ledger and Writing	2	@	2.10
Solid Stock	....	@	1½
Book Stock, No. 1 light	....	@	1½
Old Newspapers	40	@	....
Manillas No. 1	....	@	1.15
Manillas No. 2	80	@	....
Mixed Manillas	60	@	....
Hardwares, No. 1	65	@	....
Mixed Papers	40	@	....
Commons	25	@	30
Binders' Board Cuttings	50	@	....
Strawboard Cuttings	45	@	50

English Rags, &c

New Cuttings, cotton	5	@	5½
London Fines, cotton	3½	@	4
Outshots, cotton	2½	@	3
Seconds	1½	@	1.65
Thirds	1¼	@	1⅜
New Print Tabs	2¾	@	3
Checks and Blues	2¼	@	2½
Light Prints	1½	@	1¾
Light Fustians	2	@	2¼
Dark Fustians	1¼	@	1⅞
Black Calicoes	1¼	@	1¼
First Canvas Linen	3¼	@	4
Second Canvas Linen	3	@	....
Gunny Bagging, No. 1	1¾	@	1½
Gunny Bagging, No. 2	1.05	@	1.20
Burlaps Bagging, No. 1	....	@	1.60
Rope, Manilla	2½	@	....
Rope, Manilla, tarred	....	@	2
Jute Threads	....	@	1⅞
Clean Jute Ropes	2	@	2½
Mixed Rope	1½	@	1½
Flax Tow	1¼	@	1½

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2¼	@	2½
White and Colored Shavings, No. 1	1¾	@	1⅞
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2½	@	....
Paper Collar Cuttings	....	@	2
Briefsand Letters	1½	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	⅞	@	1
Old Blank Books	2¼	@	2½
White and Buff Railway Sheets	1¾	@	....

Hamburg Rags, &c.

N S C, New Shirt Cuttings	....	@	4¼
S P F F F, No. 1 Linens	....	@	3¼
S P F F, No. 2 Linens	....	@	3½
S P F, No. 3 Linens	2	@	2¼
F G, No. 4 Linens	....	@	2
F F, No. 5 Linens	1¾	@	1.85
Extra Fine Blue Linen, light color	2	@	....
L F B, Blue Linens	2¼	@	....
C S P F F F, No 1 Cottons	....	@	3½
C S P F F, No. 2 Cottons	....	@	2¾
C S P F, No. 3 Cottons	1⅞	@	....
C C C, Colored Cottons	....	@	75
C F X, Low grade Cottons	....	@	75
Extra Fine Blue Cottons	....	@	1¼

Pulps and Fibres.

Ground Wood, domestic, delivered	1	@	1.35
Ground Wood, foreign, ex dock	....	@	....
Soda Fibre, domestic, unbleached	....	@	....
Soda Fibre, domestic, bleached	3	@	3¼
Soda Fibre, foreign, unbleached	2.65	@	3
Soda Fibre, foreign, bleached	3½	@	....
Sulphite, domestic, unbleached	2.60	@	3
Sulphite, domestic, bleached	3½	@	3¾
Sulphite, foreign, unbleached	3	@	3¾
Sulphite, foreign, bleached	4	@	4¼

Japanese Rags.

Blues, Hiogo, ex store	1.30	@	....

Chemicals, Coloring Materials, &c.

Alkali, 58 ℔ cent	....	1	@ 1.20
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1¾	@	¼
Alum, Diamond	....	@	2¼
Alum, pearl	2¾	@	2¾
Alum, porous	2¾	@	2¼
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¼
Anti-Chlorine	....	@	2¾
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	1.85	@	1.95
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.20	@	2.30
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3¼
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9½
Potato Starch	4½	@	4¾
Prussian Blue, dry	20	@	35
Prussiate Potash, American	....	@	24½
Rosins, common to good strained, ℔ bbl	1.90	@	1.92½
Rosins, E, ℔ bbl	1.95	@	1.97½
Rosins, F, ℔ bbl	2.00	@	....
Rosins, G, ℔ bbl	2.10	@	....
Rosins, H, ℔ bbl	2.25	@	....
Rosins, I, ℔ bbl	2.50	@	....
Rosins, K, ℔ bbl	....	@	2.70
Rosins, M, ℔ bbl	....	@	3.00
Rosins, N, ℔ bbl	....	@	3.15
Rosins, W G, ℔ bbl	3.20	@	....
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.57½	@	1.70
Soluble Blue	40	@	55
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2¼
Sulphuric Acid, 66 ℔ cent	1	@	1¼
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre, Rochelle	1.35	@	1.50

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	2¾	@	....
Common Seconds	1½	@	2
Thirds and Blues	1½	@	....
Southern Mixed Rags	80	@	90
Colors, country	½	@	¾
Colors, city	25	@	50
New Calicoes, light	2	@	....
New Calicoes, dark	1¾	@	....
Shirt Cuttings, best	4	@	....
Shirt Cuttings, good	3¼	@	....
Shirt Cuttings, unbleached	3½	@	....
Shirt Cuttings, unbleached No. 2	2	@	....
Shirt Cuttings, cheviots	2½	@	2½
Overall Cuttings, blue	2½	@	2¾
Overall Cuttings, brown	1¾	@	2
Shoe Rags, bleached	3¼	@	3⅝
Shoe Rags, unbleached	3¼	@	3½
Shoe Rags, brown	2¾	@	3⅜
Cotton Flannels, bleached	2	@	....
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	3¾
Corset Rags, white	4	@	4¼
Tailors' Seconds	1¼	@	1⅜
Tailors' Colors	25	@	30
Cotton Canvas	2¾	@	2½
Cotton Canvas, No. 2	1¾	@	1½
Linen Canvas	1½	@	1¾
New Canvas Cutting	3½	@	3¾
Insole Canvas	3	@	3¼
Print Papers, best	30	@	35
Folded News	40	@	45
Old Waste Papers	25	@	30
Manilla Paper, No. 1	1.10	@	1.15
Manilla Paper, good mixed	80	@	95
Manilla Paper, blues	65	@	70
Mixed Book Stock	90	@	1.00
Books and Pamphlets	1.10	@	1.15
Book Stock, light	70	@	75
Ledgers and Letters	1.85	@	1.90
Soft Book Shavings	1¾	@	2
Hard White Book Shavings	2½	@	2¾
Leather Board Chips	75	@	80
Straw Chips	35	@	40
Shivey Bagging	1¾	@	1½
No. 1 Factory Bagging	1.00	@	1.10
Burlap Bagging	1.00	@	1.10
Burlap Bagging, large pieces	1¾	@	2
Kentucky Bagging	1	@	1½
Mixed Bagging	½	@	¾
No. 2 Bagging	¾	@	⅞
Shakings, soft	½	@	¾
Tarred Shakings	1	@	1¼
Standing Rigging	2½	@	2¾
Standing Rigging, foreign	2½	@	2¾
Bolt Rope	2	@	2.05
Oakum Junk, No. 2	1½	@	1¾
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	¾	@	⅞
Manilla Rope	1¾	@	1⅞
Tarred Manilla	1¾	@	1¾
Hemp Strings	1	@	1¼
Sisal Strings	1.15	@	1.20
Wool Strings	1.10	@	1.15
Flax Tow	½	@	⅝
Flax Waste	½	@	⅝

New Papers.

Superfine Book	....	@	....
Fine Book	....	@	....
News, rag and wood	....	@	....
Manilla, Cream Rope	....	@	....
Manilla, No. 1, Rope	....	@	....
Manilla, Extra Jute	....	@	....
Manilla, Jute and Gunny	....	@	....
Manilla, No. 2	....	@	....
Manilla, Bogus	....	@	....
Hardware, No. 1, tarred	....	@	....
Hardware, No. 2	....	@	....
Hardware, red	....	@	....
Strawboards, air dried, ℔ ton	....	@	....
Strawboards, steam dried, ℔ ton	....	@	....
Straw Wrapping, heavy	....	@	....
Straw Wrapping, light	....	@	....
Binders' Boards, ℔ ton	....	@	....
Leather Board, Common, ℔ lb	....	@	....
Leather Board, counter	....	@	....
Leather Board, extra	....	@	....
Tar Boards, ℔ ton	....	@	....

Chemicals.

Alkali	92½	@	1.00
Aluminous Cake, currency	1¼	@	1½
Alum, American ground	1.75	@	1.80
Alum, American lump	1.65	@	1.70
Anti-Chlorine	2	@	2½
Bichromate Potash	....	@	9
Bleaching Powders	1.90	@	2
Caustic Soda, 74 ℔ cent	2½	@	2¾
Clay, English, ℔ ton	13.00	@	17.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	55	@	60
Extract Logwood	5½	@	10½
Lime, Rockland, ℔ bbl	85	@	90
Prussian Blue, ℔ lb	36	@	38
Prussiate Potash, yellow	19	@	20
Prussiate Potash, red	36	@	38
Rosin, Cabarron strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.20	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, ℔ lb	67½	@	70
Soda Ash, 48 ℔ cent. caustic	1.30	@	1.50
Soda Ash, 48 ℔ cent. carbonated	1.00	@	1.25
Soluble Blue	2.50	@	3.50
Sugar Lead, white	8¾	@	....
Sugar Lead, brown	5½	@	6
Sulphuric Acid, 66°	¾	@	1¼
Terra Alba, ℔ ton	9.00	@	15.00
Ultramarine, ℔ lb	7	@	25
Venetian Red, ℔ lb	1¼	@	2½
Vitriol, Blue	4	@	4¼
Yellow Ochre	½	@	1

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Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—SITUATION AS FOREMAN OR machine tender; references; any kind of paper. ROBT. BALLENTINE, 353 State St., Albany, N. Y.

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WANTED — A FIRST-CLASS MACHINE tender wants situation in a good, steady mill running book, news or manilla; best references. GEO. A. LONG, New Market, N. H.

WANTED—TO LEASE A PAPER MILL FOR a term of years, as follows: One cylinder machine, 52 inch or upward; location, near or about New York, Philadelphia or Baltimore. Address P. O. Box 91, Wheeling, W. Va.

SITUATION WANTED—AS BOSS MACHINE tender; accustomed to large machines and high speed; book, manilla and news mill; best of references. Address O., care Journal.

SITUATION WANTED AS MACHINE tender; am sober and steady; state wages. HENRY WALRAVEN, 2822 Reynold, Bridesburg, Pa.

WANTED—MACHINE TENDER, 88 INCH Fourdrinier Pusey & Jones machine, on book papers; married; strictly sober; references. Address YORKE, care of Paper Trade Journal.

WANTED—POSITION AS SUPERINTENDent in manilla mill, by man who thoroughly understands manillas; had good experience in constructing and starting new mills; will be open for engagement about August 1; all correspondence strictly confidential. Address M. S. H., care Paper Trade Journal.

WANTED—A FIRST-CLASS SALESMAN FOR a mill making 2½ tons per day; book and writing papers; must be thoroughly acquainted with the publishing and jobbing trade. Address HOLYOKE, care of Paper Trade Journal.

WANTED.

A practical paper maker with twenty-five hundred dollars to take one-third interest with a company doing a good paying business, full of orders. The party with the above amount must be able to take charge and superintend the mill at a salary of fifteen hundred dollars per year. Mill running on manilla.

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Paper Trade Journal.

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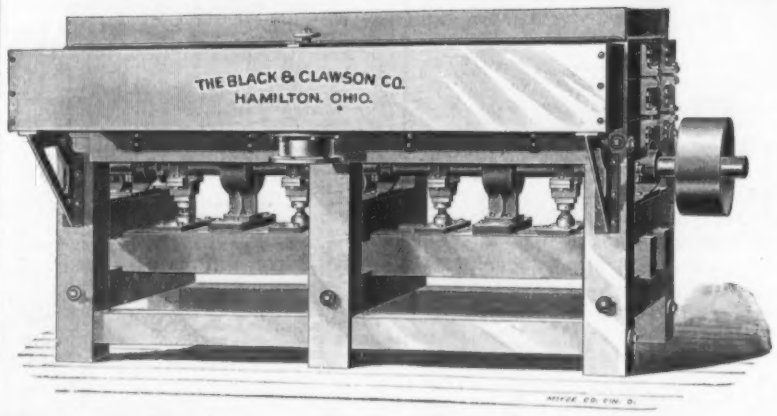

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My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law. MOSES NEWTON, Patentee.

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One 82 inch Fourdrinier machine complete, with press rolls; nine 36x78 inch dryers; stack of chilled rolls; reel, cone pulley cutter; Marshall driving train; made in 1887 and used three years.

One 76 inch Fourdrinier machine which takes 42 foot wire; gun metal press rolls; nine 48x72 inch face dryers; heavy stack chilled rolls; reel, cutter and Manning winder. Machine set up as last used.

One 54 inch cylinder machine; two molds, vat, first and second presses; seven iron dryers, 28x54 inch face; new revolving reel; cone pulley cutter.

Two new Jones double lighter beating and washing engines; iron rolls 52 inch face.

One 74 inch double cylinder machine, consisting of screens, two molds, 30x74 inches; first and second presses; wood and iron rolls; fifteen iron dryers, 36x72 inches; stack of nine chilled rolls, revolving reel, slitter and winder, with Marshall driving train.

One 56 inch double cylinder machine, consisting of knocker screen, two molds, 30x56 inches; good sound vat; first and second presses; three iron and one wood roll, 12x55 inches; nine iron dryers, 36x54 inches, with heavy frames, siphon packing boxes and patent exhaust; one stack of five chilled rolls, two 12, three 7x54 inch face; one cone pulley cutter, with 54 inch knife; upright reel; in excellent condition.

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One Pusey & Jones slide valve engine, 15x36 inches; 12x19½ inch face wheel, and shaft, 8½ inches.

One Chambers Brothers 16x36 inch slide valve engine, with wheel, 12 feet by 24 inches.

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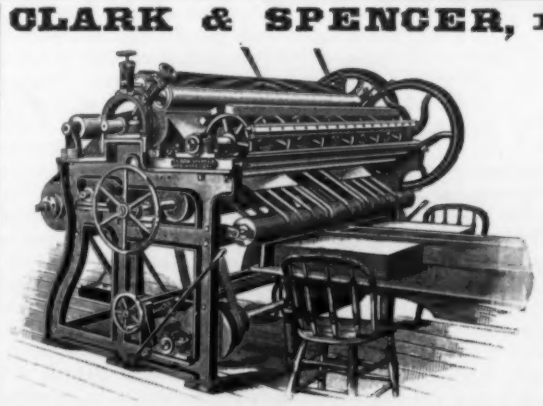

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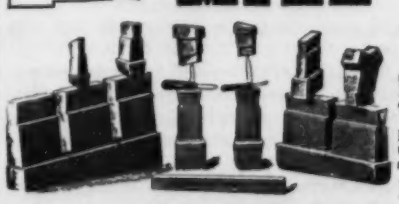

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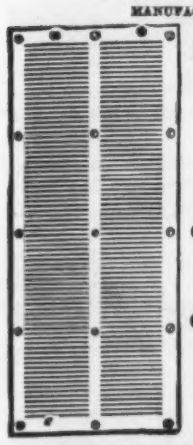

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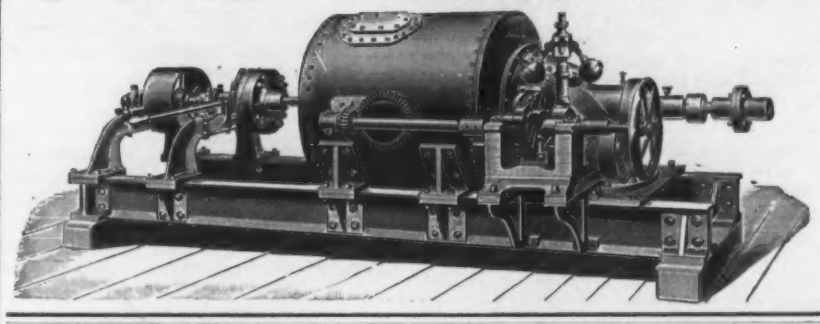

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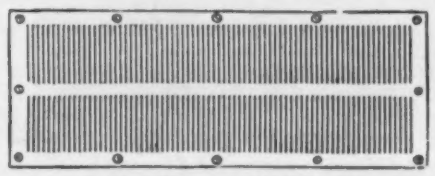

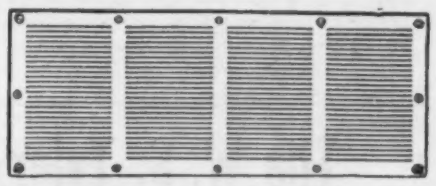

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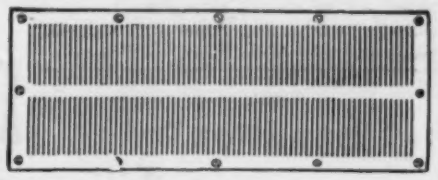

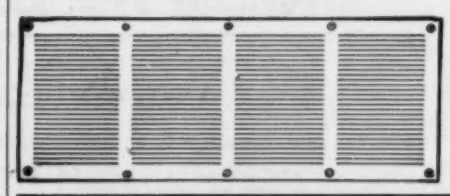

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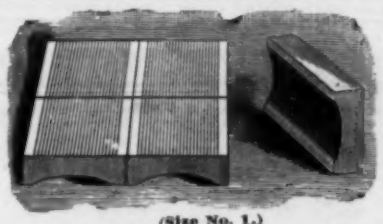

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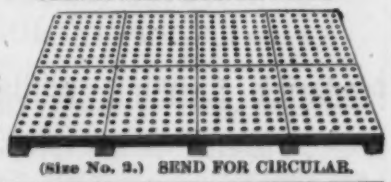

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We are also manufacturers of Talc and Stone Mill Machinery and Mine and Quarry Equipment.

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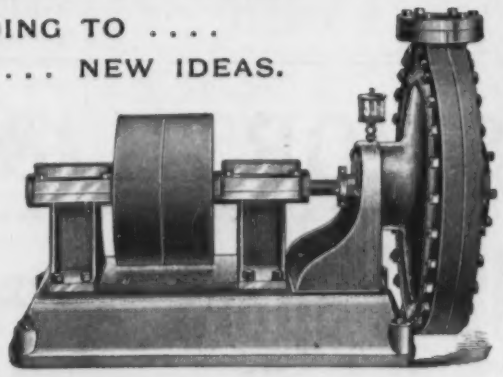

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We make a specialty of the manufacture of PLUGS for Roll Paper of all sizes and descriptions. Write for samples and prices.

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(At Old Stand of Rice, Barton & Co.),

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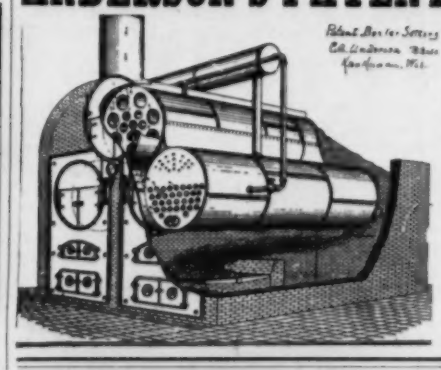

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(Dictated.) WINNEBAGO PAPER MILLS, W. L. DAVIS, Secy. and Treas.

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C. A. ANDERSON,

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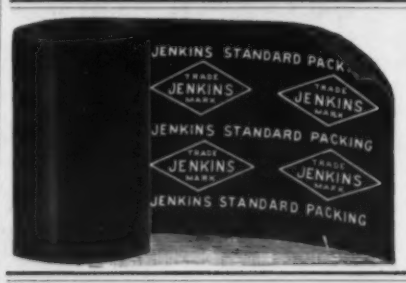

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Is all right, so say thousands of Engineers. We have positively refused many times to cheapen the quality to compete with other makers. It is better to-day than when first put on the market twenty years ago. It is cheaper than many other kinds because it does not weigh as much per yard. It is honestly made, and will do all that any other Packing will do, and has advantages that no other has.

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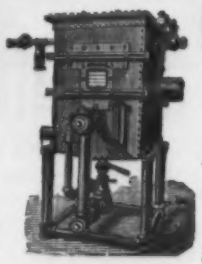
New York. Chicago. Philadelphia. Boston.



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a very considerable saving in the items of water and fuel by the use of our **Vacuum Feed Water Heater and Purifier,** *and this means, of course, an extra profit on your output. The "how" will be found in a comprehensive Catalogue, which is yours for the asking, also Catalogues of the Webster Separator and Williams Vacuum System of Steam Heating.*

WARREN WEBSTER & Co.,

NEW YORK, 39 Cortlandt Street. CHICAGO, Monadnock Building. No. 2. *CAMDEN, N. J.*

Manufacturing News.

EASTERN STATES.

W. A. Cole, Putney, Vt., will rebuild his mill which was burned on April 27. He will put in a full line of new machinery, including a 72 inch machine, built by the J. H. Horne & Sons Company, Lawrence, Mass.; two 5 foot boilers, and an 80 horse power steam engine, built by the Rollins Engine Company, Nashua, N. H. The mill will be built of brick.

The Malleable Iron Fittings Company, of Branford, Conn., has placed the contract for its new foundry building with the Berlin Iron Bridge Company, East Berlin, Conn.

The two drives of the Fall Mountain Paper Company, Bellows Falls, Vt.—one from the White River, Vt., the other from the Ammonoosuc River, N. H.—are proving both troublesome and expensive. The breaking of booms during the freshet and now the rapidly falling waters have so retarded progress toward the Connecticut River that the White River drive will not have reached that point before this week, while the Ammonoosuc will take some weeks longer.

Work on the addition to the mill of the Chester Paper Company, Huntington, Mass., is being pushed.

An acid tower, 120 feet high, belonging to the pulp mill of the Manufacturing Investment Company, Madison, Me., is in imminent danger of falling. The contractors engaged to right it say that it will take about 75,000 feet of timber and several weeks' work to do the job.

The National Blank Book Company, Holyoke, Mass., is to have a new building at that place.

The Connecticut River Paper Company, Holyoke, Mass., has filed these corporation returns: Last annual meeting, April 20, 1895. Treasurer, L. J. Powers; fixed capital, $150,000; assets, land, water power, buildings and machinery, $300,000; cash and debts receivable, $17,632; manufactures and merchandise, 59,749; total, 533,382. Liabilities—Capital stock, $150,000; debts, $284,804; profit and loss, 98,578; total, $533,382.

The following named officers were elected at the annual meeting of the Keith Paper Company, Turner's Falls, Mass., on May 24; President, Alexander H. Rice, of Boston; clerk and treasurer, C. M. Barnett, of Turner's Falls; directors, A. H. Rice, C. T. Crocker, A. Pagenstecher, W. H. Mairs, E. D. Jones, B. N. Farren, E. Warner, J. Buckley and C. M. Burnett. Business at the mills is reported good, a full force being employed on full time.

The Geo. W. Wheelwright Paper Company, North Leominster, Mass., is putting in some of the latest improved machinery. A 175 horse power boiler will also be put in, and additional buildings will be erected before the season closes.

MIDDLE STATES.

The Ticonderoga Pulp and Paper Company, Ticonderoga, N. Y., has not shut down its paper mills. Its soda fibre mill only has been shut down for repairs, and will be started up again to-day.

The new refrigerating plant for the International Cooling Company, Atlantic City, N. J., will be designed and built throughout by the Berlin Iron Bridge Company, East Berlin, Conn.

Testimony was heard before a jury on May 20 at Norristown, Pa., in the case of S. A. Rudolph, owner of the Ashland Paper Mills, West Manayunk, Pa., against the Pennsylvania and Schuylkill Valley Railroad Company for damages to the property of the plaintiff by reason of the construction of the Pencoyd spur. The claim aggregates $218,000. The testimony for the claimant was that black smoke from locomotives passing over the Pencoyd spur so discolored the paper in his mill that the manufacture of the better quality had to be discontinued, for which injury to his business he claims $200,000. The remainder of the claim is for the destruction of his stable and for the impairment of the value of his mansion and tenements.

The Olympus Paper Mill, Troy, N. Y., resumed operations on May 23, after a suspension of three days, owing to the setting of a new turbine wheel.

The Standard Wall Paper Company, Glens Falls, N. Y., has started a few of its machines.

It is proposed to build a mill for the manufacture of paper novelties at Roxbury, N. Y.

The Gould Pulp and Paper Company has thirty men at work on its extensive new mill at Lyons Falls, N. Y.

The York Wall Paper Company, York, Pa., expects to have its new factory in running order by September 1. It will be three stories high, 240x60 feet, and will have seven machines.

During the six days of the week ended May 22 the Herkimer Paper Company, Herkimer, N. Y., made on its two machines 328,283 pounds of news, an average of over 27 tons per day.

WESTERN STATES.

The Combined Locks Paper Company, Appleton, Wis., has announced an advance of 10 per cent. in the price of its paper.

The mill of the Columbia Straw Paper Company, Massillon, Ohio, has been leased by John Silk, who is now operating it, and who will probably regain possession of the mill when the assets of the company are sold. Owing to a shortage of coal the mill will have to close down in a few days.

The Delphos Paper Mill, Delphos, Ohio, has been closed on an attachment.

The construction of a paper mill at St. Joseph, Mich., is assured. The necessary transfers of title are being arranged for.

George M. Beck, president of the Fort Scott Paper Mill Company, Fort Scott, Kan., was arrested recently by State Fish Commissioner O. E. Sadler on the charge of emptying poisonous matter into the Marmaton River. For two years the fish in the river below the paper mill have been dying, and farmers complained of stock having been poisoned by drinking from the river. It is claimed that refuse from the paper mill has polluted the water to the extent that it has become injurious to fish and to any person using it.

SOUTHERN STATES.

The Singerly Pulp and Paper Company, Singerly, Md., is putting in two new turbine wheels. A tail race about 100 yards long has been cut through solid rock to a depth of about 15 feet. A Corliss engine of 180 horse power will be put in to take the place of two smaller engines. Two new reservoirs have been built.

CANADA.

The Royal Paper Mills Company has purchased the plant and general assets of the Royal Pulp and Paper Company, East Augus, Que. The St. Francis Lumber Company has amalgamated with the Royal Paper Mills Company and is going to build a gigantic saw mill. The officers of the new concern, are F. P. Buck, president; Hon. R. H. Pope, vice president; H. B. Brown, secretary, and A. F. Fraser, treasurer.

The Canada Paper Company, Montreal, Que., has put in a siding on the Grand Trunk at Windsor Mills so as to hasten the erection of its pulp mill, which is to be finished the coming fall, if possible. Its capacity will be 15 tons of pulp per day. The dam, which will give 3,500 horse power, is to be completed speedily, as is also the electric light plant. The total expenditure will be, it is thought, $200,000.

Obituary.

EDWIN R. COPE.

Edwin R. Cope, one of the oldest and most prominent paper manufacturers of Philadelphia, died on Saturday, May 25, at his home on Tulpehocken street, Germantown, of paralysis. He was buried on Tuesday, at 11 A. M., from St. Luke's Protestant Episcopal Church, of which he was a long time the accounting warden.

Mr. Cope was born on March 7, 1820, on York road, near Buttonwood street, Philadelphia, his father being Jacob J. Cope, for many years cashier of the Commercial Bank. After leaving school Mr. Cope entered the counting rooms of Charles and Samuel Magarge, paper dealers, in which trade he was destined to become one of the foremost and leading members. By his exceptional ability and industry he advanced so rapidly with the Messrs. Magarge that, about the time he reached his majority, and Samuel Magarge dying, Charles Magarge offered him a partnership, the firm becoming Magarge & Cope, operating the Wissahickon Paper Mills in addition to their merchandizing.

Later the firm acquired a grist mill further up the Wissahickson, at Spruce Mill lane, and altered it into what was for many years known as the Hanwell Paper Mills. The various mills along the Wissahickon creek at this date were obliged to use the cross roads in order to get their goods to market, going either west to Ridge road or east to Germantown road. Mr. Cope recognized the necessity for a road following the creek, which would afford an easier and shorter route to the city, and was instrumental in organizing the turnpike company, which built the road partly on the east and partly on the west banks, and for a long time was active in its management. This is now the Wissahickon drive.

In the early '50's, his health failing, he retired from business, but upon its recovery his active disposition led him to re-enter the same line, and he then erected, about 1856, on the Schuylkill, at Lafayette Station, the Riverside Paper Mills. Here he entered what was then a new field, in the manufacture of the finest and highest grades of colored papers, in which he had a practical monopoly for a long time. Upon his final retirement from business, in 1874, these mills passed into the possession of William C. Hamilton & Sons. He 1852 he removed his residence from Frankford road to Germantown, and a few years later built his residence on Tulpehocken street, in which he remainded until his death.

Mr. Cope was one of the earliest members of the Union League and the first Committee of One Hundred and various other bodies of a similar character. Being of an extremely charitable disposition, he gave liberally, much of his giving being done in a quiet and unostentatious manner, so that it was known only to the beneficiaries.

Being a great reader, and endowed with a most retentive memory, he devoted the latter part of his life to literary pursuits, collecting a large and valuable library, and probably one of the finest collections of prints in the city, and, in addition, much rare old china, all of which it gave him great pleasure to show and discourse about to his friends.

Joseph Shaw, paper box manufacturer, died at his home in Allegheny, Pa., on May 26, aged sixty-four years.

Personals.

General Manager N. M. Jones, of the Howland Falls Pulp Mill, has resigned that position and will give more time to the management of the New England Sulphite Digester Company and the Katahdin Pulp Mill at Lincoln.

Accidents.

While at work on a staging at the pulp mill at Orono, Me., on May 20, James H. Felker slipped and fell to the floor below, striking in such a manner as to fracture his collar bone.

George Dolbier, while at work in the mill of the Manufacturing Investment Company, Madison, Me., recently, was caught by a shaft which was running 325 revolutions a minute and, after making two revolutions, grasped a piece of timber, to which he clung until his clothing was torn off, when he released his grip and fell to the floor.

Fires.

The office of the *Chronicle*, Inverness, Fla., was destroyed by fire May 21. Loss, $1,100.

Matthew F. MacMahon, stationer and newsdealer, Whitestone, N. Y., was burned out on May 23.

The engine room of the Tomahawk Pulp and Paper Mills was burned on the night of May 22. Loss, $1,500.

The plant of Boyd, Gillies & Co., wholesale paper dealers and stationers, Montreal, Que., was destroyed by fire on May 27. Loss, $50,000.

The Mentzel Paper Company's storage room, operated by the Gunpowder Paper Company on Sucker Branch, Ellicott City, Md., was burned on May 27. Loss, with raw material, several thousand dollars; insured.

The Fairbanks Company, New York, invites an inspection of its specialties for steam, water, gas, oil, &c., in asbestos seat gate valves, asbestos globe valves, swinging check valves, return traps, asbestos packed cocks, Hancock inspirators, &c., at any of its houses in New York, Albany, Boston, Philadelphia, Baltimore, Buffalo, Pittsburg and New Orleans.

THE "Hamilton" Felt.

"Best and Most Economical Made."

WISE PAPER MAKERS

don't always want to buy high priced imported Felts, nor do they want to experiment with inferior grades of domestic ones. The "Hamilton" answers their requirements in every respect.

In ordering mention kind of stock used, quality of paper made and speed of machine.

Shuler & Benninghofen, Hamilton, Ohio.

The W. S. Tyler Wire Works Co.,

CLEVELAND, OHIO.

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Cylinder Faces and Washer Wires.

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CHEMICAL ENGINEERS, ANALYSTS AND INDUSTRIAL CHEMISTS.

Analyses, processes and counsel in sulphite, pulp and paper manufacture. Ten years Chemists to the City of Buffalo, and Professors of Chemistry University of Buffalo.

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THE GENERAL FIRE EXTINGUISHER COMPANY,

CONTROLLING THE INVENTIONS AND APPARATUS PERTAINING TO AUTOMATIC SPRINKLERS OF

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EXECUTIVE OFFICES, PROVIDENCE, R. I.

Noble & Johnston Machine Co.,

Hoosick Falls, N. Y.,
Manufacturers of

Paper Mill Machinery.

Jordan & Beating Engines.

Iron or Wood Tubs, Laid or Steel Bars and Knives. Bed Plates and Jordan Fillings of every description a specialty. Correspondence solicited.

HOLLINGSWORTH & WHITNEY CO.,

MANUFACTURERS OF ALL GRADES OF

Manilla Papers AND Pure Fibres.

PROPRIETORS OF

TACONNET PAPER MILLS, WINSLOW, ME.....Product. 40 tons Manilla Paper daily.
AROOSTOOK MILLS, GARDINER, ME.....Product: 8 tons No. 1 Manilla daily.
COBBOSSEE MILLS, GARDINER, ME.....Product: 10 tons No. 1 Manilla daily.
PEQUOSSETTE MILLS, WATERTOWN, MASS.....Product: 12 tons No. 1 Manilla daily.
TACONNET PULP MILLS, WINSLOW, ME.....Product: 50 tons Wood Pulp daily.

Boston Office:
44 FEDERAL STREET.

New York Office:
207 BROADWAY.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
Holyoke Pad and Ruling Company, Holyoke, Mass.	$600

MIDDLE STATES.

Nelson Manufacturing Company, Brooklyn, N. Y.	785
Ellen Farnham (Mrs. Henry), Syracuse, N.Y.	2,000
Oscar C. Post, Towanda, Pa. (R. judg.)	1,000

WESTERN STATES.

H. E. Lawrence, Pasadena, Cal.	148
W. S. Wise, Perris, Cal. (Real)	1,571
C. B. Flanagan, San Francisco, Cal.	310
Coil & Schaeffer, Beardstown, Ill.	1,300
Fred. Akers, Cresco, Ia	300
Keokuk Book and Stationery Company, Keokuk, Ia.	8,300
Arthur E. Winchester, Grand Rapids, Mich.	775
Hastings Meyers St. Paul, Minn.	225
George N. Warren, St. Paul, Minn. (R.)	300
Elmer E. Smith, Emerson, Neb.	405
L. L. Correll (Mrs. E. M.), Hebron, Neb. (B. S.)	2,000
Casper Heeg, Cincinnati, Ohio	200
Jacob Willig, Cincinnati, Ohio	237
The Barrett Publishing Company, Springfield, Ohio (R.)	8,000

SOUTHERN STATES.

Hamilton H. Miller, Hagerstown, Md. (Real).	2,000
Chas. Wreatham, Temple, Tex. (T. D.)	—

LIENS DISCHARGED.

F. J. Bauer, Los Angeles, Cal. (Real)	—
Coil & Schaeffer, Beardstown, Ill.	950
G. S. Terrill, Jefferson, Ia.	500
W. M. Starr, Wichita, Kan.	110

General Notes.

The *Zeitung*, Cincinnati, Ohio, is in the hands of a receiver. Jacob Willig, the lessee, recently started the *Journal*, and is charged with transferring all of his advertising, &c., to the new paper.

The contract for supplying all of the Government departments at Washington with envelopes has been awarded to the Springfield Envelope Company, the Powers Paper Company, Easton & Rupp and White, Corbin & Co.

Proposals for supplying toilet paper and toilet paper fixtures to United States public buildings under the control of the Treasury Department east of the Rocky Mountains were as follows: D. F. Walker, Philadelphia, Pa., 6 cents per roll; fixtures free. J. P. & A. R. Rath & Co., New York, N. Y., 6 ounce, 3¼ cents; 7 ounce, 4¼ cents; 8 ounce, 4¾ cents; 9 ounce, 5¼ cents; fixtures, 2 cents each. C. C. White Toilet Paper Manufacturing Company, New York, N. Y., Chinese doeskin, $6.50 per 100 rolls; green label, $6.50 per 100 rolls; fixtures free. J. C. Parker, Washington, D. C., Great Western Mills, 5¼ cents per roll; Air Line, 5¾ cents per roll; Springfield Oval, No. 1, 5¾ cents per roll; Springfield Oval, No. 2, 5¼ cents; Pyramid Oval, No. 1, 6¼ cents; Pyramid Oval, No. 2, 5½ cents; fixtures free.

A New Electric Battery.

A new electric battery of a very interesting sort has been devised by Dr. Borchers, of Driesburg, in Germany, its chemical peculiarity being that the current is generated, not by the solution of metal, but by the conversion of hydrocarbons and carbonic oxide into carbonic acid. As this is practically the same reaction that takes place in burning coal, the useful energy derived from the oxidation of a given weight of carbon in the battery can be directly compared with the effect of burning coals or coal gas to drive a steam engine, or in a gas engine.

It is well known that a steam engine utilizes about 12 per cent., under the most favorable circumstances, of the theoretical energy produced by the oxidation, in the boiler furnaces, of the coal used to drive it; and a good gas engine utilizes about 20 per cent.; while the Borchers battery is said to have delivered at times, in available form, 38 per cent. of the energy liberated by the consumption of carbon in it, and at no time to have delivered less than 26 per cent. It would be curious if the oxidation of carbon in the wet way, in a battery, should give more than three times as much power, per pound of coal consumed, as burning it in a boiler furnace; but this is just what is claimed for the new battery, and it is obvious that if the claim is sustained it will not be long before steam boilers are abandoned and power derived entirely from batteries and distributed through wires and electric motors to persons desiring to use it. —*Boston Journal of Commerce.*

Remember that if you use a jet condenser the feed water will be taken from a hot well, which is filled with the injection water and the water of condensation mixed together.

When taking diagrams with the steam engine indicator care should be taken to oil the piston frequently with a good, clean cylinder oil, as a neglect of this precaution accounts for many a freak along the line of indicator cards.

From Apprentice to Superintendent.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By B. F. Fells.

(Continued.)

Learning a business consists in learning how to do certain things. So it is with rules so freely given regarding what to do with a machine. It is right to be told what to do; now let us have something on how to do it and how to work, and what cultivation we need to make us good workmen. I have always noticed that better work is obtained from the rag cutter or, in fact, from any machine in the paper mill, if that machine is not only adjusted to suit the work in hand, but is favored more or less to meet the condition of the person running it. A person gets used to a machine running in a certain way, and a change bothers him. The locomotive engineer does not want to handle a strange engine, because he knows the very soul of his own, and he can handle it with delicacy which dissipates all fear and uncertainty. So it is apparent that in all things the convenient arrangement for handling a machine is an important factor in obtaining all around efficiency. I can recall many instances when I dreaded the doctoring of my machine at the time I was a feeder. If the machine was working badly, the nature of everything would usually be changed by tinkering. When I have had an easy stopping and starting grinder—a little banging and changing would upset it all, and it would take me several days to get accustomed to it again. All of the plans of the machinist should be directed to securing perfect and complete efficiency in the machine as a whole. If he misses in some things it is because he fails to realize what is the real important thing to do.

My next experience began in the sorting room, where I was given the situation of "cleaner" at the meagre pay which the former incumbent received for this menial service, and which amounted to 60 cents per day. I did not like this small recompense. However, they assured me that I had to retain the situation only for a short period, and in the meantime I was advised to secure all of the information concerning cleaning and sorting rags that I possibly could. If one of the sorters should vacate his position I would be appointed to take it.

Next I secured work in the rag cutting room, and while there obtained some valuable points relating to this part of the business. Some of these, which are considerably enlarged upon by a quarter of a century's experience, are related below. Before putting the belt on the tight pulley of the machine see that the knives are set so as barely to touch the bed knife. If the rotary knives are set out too far they are likely to cut off the sharp edge of the stationary knife, or wear off their own edges, both of which cause trouble. If the knives are correctly adjusted, and relative mechanism is set right, good work may be expected, otherwise quite bad work. The process of rag cutting is hard work and requires a solid machine and a skilled man. Most modern machines are built solidly enough, and particular attention is now given to the length of the bearings. A machine where the length of bearing is less than three diameters of the shaft lacks strength and stability, and in a comparatively short time will be unfit to do good, even work. Solidity is undoubtedly a chief point.

When a rag cutter is set up run the belt downward, if possible, for a machine thus belted will run smoother than if belted horizontally. The reason for this is that if the machine is belted vertically downward the pull of the belt comes upon one bearing and the weight of the balance wheel on the other. The driving pulley shaft should be arranged so as to give the best results without hampering or straining the machine, for although the rag cutter may be solidly built, continual straining of the belt will move it out of line, resulting in many difficulties. A defect of the system of belting the machine horizontally is that the cutter-head shaft is raised from the bearing next to the belt, and this end of the shaft runs against the cap, while the other bearing lies firmly in the box; consequently every time that the knives encounter a heavy piece of work they are thrown upon each other, resulting in the rapid wearing away of the cutting edges in a manner almost identical to that where the knives are set out too much. This occurs frequently when the rags bunch.

In one particular mill in which I was employed for a time a department was set off in which to grind some of the assorted rags for shoddy purposes. Some mills are situated in districts where it is policy to purchase promiscuous lots of rags, sort them, use part for paper, and grind into shoddy and sell those fit for such a purpose. The latter grade requires oiling. A few suggestions about this oiling process may be useful. It is to be regretted that cheap and inferior oils are too often used for oiling purposes. While it is true that a fairly large expense is thereby avoided, this penny wise and pound foolish economy is more than counterbalanced by the subsequent additional outlays, not taking into account the mediocre appearance of the stock produced by the unduly hot and strong washing lyes which must be used for saponifying the bad lubricating oil. These greatly impair the appearance, soft feel and strength of the stock. In mills where rag stock is ground up for shoddy the manufacturer should be competent to judge of the good qualities of the oil. Carefully test the oil with red or blue litmus paper to ascertain whether it contains acid or alkalies. If the blue strip turns red the oil is acid; if the red strip turns blue, one may be certain that it contains alkalies. After this test take an ordinary china saucer and fill it one half full of pure aqua ammonia, then fill the other half with the oil to be tested, being careful before drawing it from the barrel to have the contents well stirred. If the oil is bad, a thick, viscous sediment will form at once. A better quality will produce much less precipitation, which is of a grain-like, whitish appearance.

If the operator wishes to be quite sure of the oil let him take a little of the sediment upon a small, cleanly washed bit of cloth, or on the open hand, and wash with the same agents generally used for washing the cloth. If the saponification is satisfactory the oil may be employed without fear, but should a tough, resinous mass remain, he may be certain that the oil contains ingredients which will cause trouble, and perhaps be a source of incalculable damage. If to bad oil is added the probability that the manufacturer is compelled to use hard or calcareous water for washing, it is easy to predict trouble and mischief for all parties concerned.

(To be continued.)

Acetylene.

A most interesting demonstration was recently made in London by the production of acetylene in the lecture theatre of the London Society of Arts. The lecturer was Prof. Vivian B. Lewes. The subject of his paper as announced was "The Commercial Synthesis of Illuminating Hydrocarbons," but the assemblage of scientists who appeared as listeners had no anticipation of the wonderful experiments they were to witness. The London *Journal of Gas Lighting* thus describes the exhibition:

The product of fusing together, in an electrical furnace, such common materials as lime and carbon in any suitable form was exhibited by Professor Lewes as a greenish-gray, stone-like substance greatly resembling the commonest description of serpentine rock. When kept in the air, a light coating of lime soon forms on its surface. Upon handling it a faint unpleasant odor, suggestive of garlic and also not altogether unlike the familiar reek that emanates from the ironwork of an old gas purifier, manifests itself.

To all appearance it is a dull, inert stone, devoid of any other properties than those of common road metal, and not more likely to be credited by the casual observer with gas yielding capabilities. Upon a piece of this material Professor Lewes sprinkled a few drops of water from a wash bottle and put a lighted taper to it. The nascent gas—acetylene—immediately ignited with more than the brilliancy of the pitchy flame of highly bituminous coal in an open fire, and continued to burn fitfully over the wetted surface until all the water was gone. Then came the display of the same gas evolved in a jar (standing upon the lecture table) which contained pieces of the carbide in water, stored in make-shift glass holders. It was a dramatic denouement of Professor Lewes' little plot when he applied a light first to a single open flat flame burner, and then to a group of similar burners, and people saw for the first time in a public place the intensely brilliant, white and solid looking flame of burning pure acetylene.

It is indeed a flame to wonder at. Nothing like it ever before came within the ken of a gas manager or dazzled the vision of a photometrist. There is something startling in the suggestion that gas of 240 candle power—calculated in accordance with photometrical practice, upon the basis of a consumption of 5 cubic feet per hour—can be burnt by means of an open flat flame burner.

In any plant where there are valves with removable disks the engineer should keep a supply of extra ones on hand at all times. Some of them may be needed at times when it is not convenient to procure them.

If your engine is fitted with a stop motion to prevent it running away when the governor belt runs off, test it frequently to prove that it is in working order. If it was all right a week ago it may not be in the same condition now.

Lubricating Oils and Lubrication.

One of the most difficult things that a mechanic or engineer is asked to do is to decide which is the best for his purpose among the many kinds of oil now offered for every purpose. The manufacture of oils has reached a stage which enables the maker to produce any kind of oil that is needed, if the user can succeed in giving to the maker an intelligent specification of what is wanted. Therefore, if an oil has not been found which is best for a given purpose, it is generally because the user does not know how to select and specify what is wanted. Many attempts have been made to devise a practical test for determining the quality of oils, so that a selection could be made for any given purpose; but no such comprehensive test as this has yet been devised.

The engineer is yet obliged to use the universal and venerable "rule of the thumb" in deciding on a suitable oil, by trying one kind after another on the thing he wants to lubricate until he discovers one that will do. Having thus settled the matter, it is very difficult to induce him to make any further trials of other oils, because he knows he could not live long enough to give a proper trial to every kind that is offered by the ubiquitous oil man, and he is therefore content to let well enough alone. Every oil manufacturer in the country can show genuine testimonials from good engineers and mechanics, who say they have tried their oil and find it "very satisfactory," or it gave "satisfactory results." Such testimonials are of no value whatever to an engineer in aiding him to decide on an oil unless he can obtain accurate and complete information in regard to the conditions under which it was used, and even then it does not answer the main question, and that is whether it is the cheapest oil that can be had that will rightly serve the purpose.

The only thing such a recommendation means is that the engineer who tried it happened to get that particular oil which served his purpose, and he will not try any other so long as it will do; but a dozen other makers may produce an oil just as suitable and perhaps cheaper, though he does not know it by trial, and therefore does not recommend it. Prof. J. E. Denton made the most comprehensive series of experiments yet made with oils, with a view of determining the qualities required by lubricants for different purposes, and he embodied the results in a paper presented to the American Association for the Advancement of Science. I will try to present the conclusion in a concise form, with some comments, for I think it will help clear away some of the errors about lubricants which are accepted as facts by many.

So far as lubricating quality alone is concerned there is very little, if any, difference between the thickest cylinder oil and the thinnest spindle oil. The conditions of the experimental proof of this were a smoothly polished car axle journal run at maximum railway speed, loaded to a pressure of 5,000 pounds per square inch and copiously lubricated by a saturated pad bearing against the lower side of the journal. Even the lightest spindle oil ran for hours under this great pressure with the minimum amount of friction. Common experience in the use of oil seems to flatly contradict this, for it is found impossible to lubricate heavy machinery like rolling mills with the light oils. Evidently it must be some other quality than that of lubrication which makes thick oil the best for such purposes. This brings us to the consideration of two other important qualities of oil. First: Viscosity or stickiness. Second: Capacity to resist decomposition by heat.

Viscosity is of value in causing the oil to cling tenaciously to a bearing when applied and thus prevent it from rubbing dry easily. Its disadvantages are that it causes more friction than thin oil, and that it is sluggish in getting to all parts of the bearing and difficult to feed with regularity.

This quality is the element of success in lubricating heavy journals exposed to dust and grit, and to which the oil is usually applied at irregular intervals.

The capacity to resist decomposition by heat is a quality the value of which is easily seen in the use of oils for steam cylinders, where only those that stand the heat of steam are of value as a lubricant. This value is not so obvious, but just as important at times in the lubrication of journals; for an oil that will stand a high temperature will permit a journal to run for a time much above its normal temperature without destroying itself, where an oil which decomposes at a lower heat would fail to lubricate. In the lubrication of engine journals and crank pins the chief desire of the engineer is to have an oil that is thin enough to feed perfectly regular and prevent overheating the bearing. When oil is supplied with certainty to all parts of the bearing, and it is not overloaded, it will not overheat unless something disturbs the condition of its surfaces.

The ordinary wear of the journal may in time so destroy its truth as to cause overheating, but this can generally be detected before it reaches a crisis, because it will attain this condition gradually, and its daily temperature will be increased so it can be detected. It sometimes occurs that, although a bearing has been kept thoroughly oiled all the time, it some day suddenly overheats without any visible cause. This is most likely due to a gradual change in a part of the bearing, due to wear caused by access of dust or grit in the oil, which abrades a portion of the bearing and prevents the oil from reaching it freely. The most perfect method of oiling is of course the continuous circulation method, in which so much oil flows through the bearing that it not only insures thorough lubrication, but washes out the fine particles which are worn off the surfaces. Whenever possible to apply it this is the most economical way of using oil, because it never wears out the oil; the only losses being that due to evaporation and what is absorbed by the dust and particles worn from the bearing. The oil for this purpose should not be any thinner than is required for a free flow through the bearing, because usually the thinner an oil is the lower its temperature of decomposition.

For vertical flat sliding surfaces oiled by a drop feed, the most viscous oils are the best, for the thin oils rub off so quickly that it requires a much larger quantity to keep it oiled. It may be stated as a general proposition that in all bearings which are oiled by the drop feed instead of circulation, the most viscous oil that can be fed with reliable regularity will be the safest and cheapest, if the increased friction due to viscosity is not a large percentage of the total power used.

The capillary property of oils no doubt has an effect on their rate of distribution on a bearing, but there is probably not enough difference in oils of the same viscosity to be of any importance. The most viscous oils will distribute on close fitting journals, but it takes many times longer for it to spread over the surface than thin oil, so that its rate of feeding cannot be increased at will in case of heating.

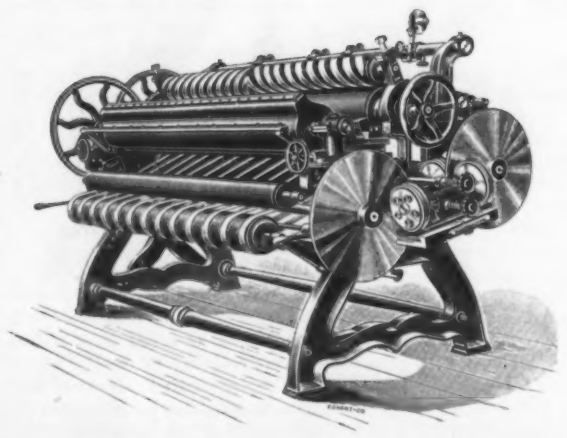
Vegetable and animal oils of some kinds dry out and leave a residue which clogs up oil holes, or, in shop language, it "gums up the bearing." Of course such oils are not suitable for a lubricant, but it is a quality which may be detected by a simple test.

In conclusion it may be stated that the best oil for a bearing must have the following qualities: First, it must have no more viscosity than just the amount required to keep it on the bearing surfaces; second, its temperature of decomposition must be as high as possible, consistent with the required viscosity; third, it must be absolutely free from grit or dirt and destructive acids. It must be understood that the limit to viscosity is imposed only because it interferes with regular feed and free distribution over bearing, and in case of light machinery because it increases friction; but if these factors do not require consideration then the most viscous oil will likely be the best to use.—*Machinery.*

A Melting Project.

Paschal Grousset, a Radical Deputy, has proposed to the managers of the Paris Exposition for 1905 to bore a mine 1,500 metres (4,805 feet) in depth in the middle of the exposition grounds. Such a mine would, he argues, settle forever the disputed question as to whether or not the interior of the earth is a mass of fire, for at a depth of nearly 5,000 feet the temperature would sensibly increase, if the contention of many geologists be correct. The experience of miners shows that below a certain depth the temperature rises one degree Centigrade per 33 metres. If this law continues to hold good at greater depths, a temperature of 100 degrees Centigrade above the ordinary temperature of the locality would be found at a depth of 3 kilometres, and at 20 kilometres a temperature of 666°—a temperature at which most substances melt. M. Grousset is astonished that men should never have sought to verify a question of such importance, and suggests that the occasion of a great exposition would be well adapted to the experiment, since the curiosity of the public might be made to cover the cost of the undertaking.

He suggests that horizontal galleries should be excavated at various depths and united by vertical shafts served by elevators. There would be electric light and perfect ventilation. The cost of the whole undertaking M. Grousset estimates at 12,000,000 frs., or at the outside 15,000,000 frs. ($3,000,000). The questions he hopes to elucidate by it are: (a) Whether the theory of the central fire of the earth be fact or fiction; (b) whether this source of internal heat, if such exists, be accessible and utilizable; (c) whether or not the sub soil of Paris serves as a roof to a vast ocean of soft water.—*Ex.*



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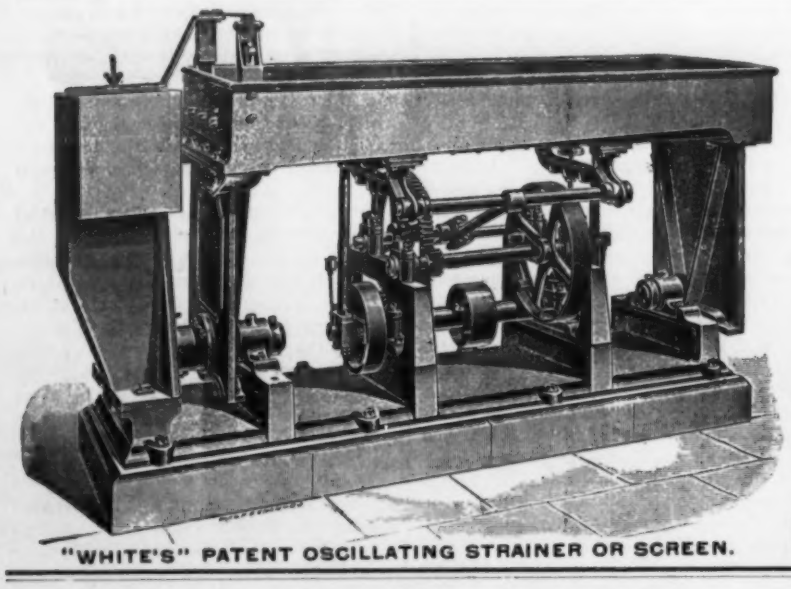

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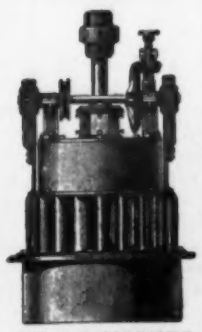

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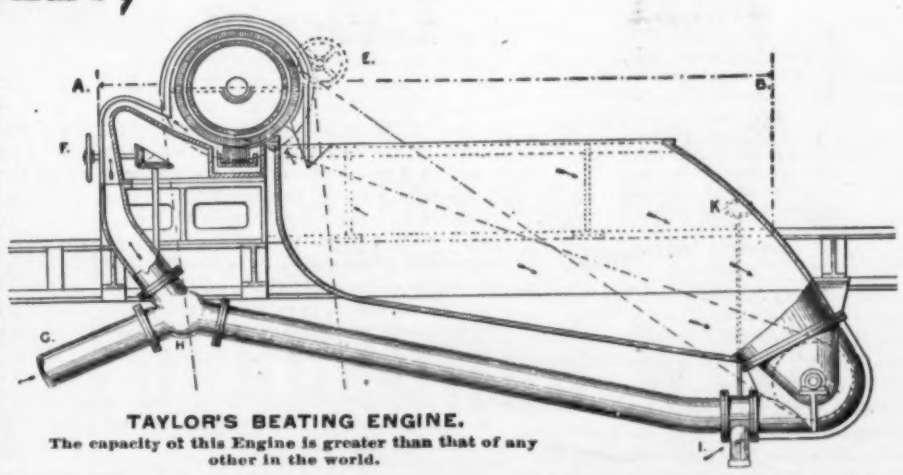

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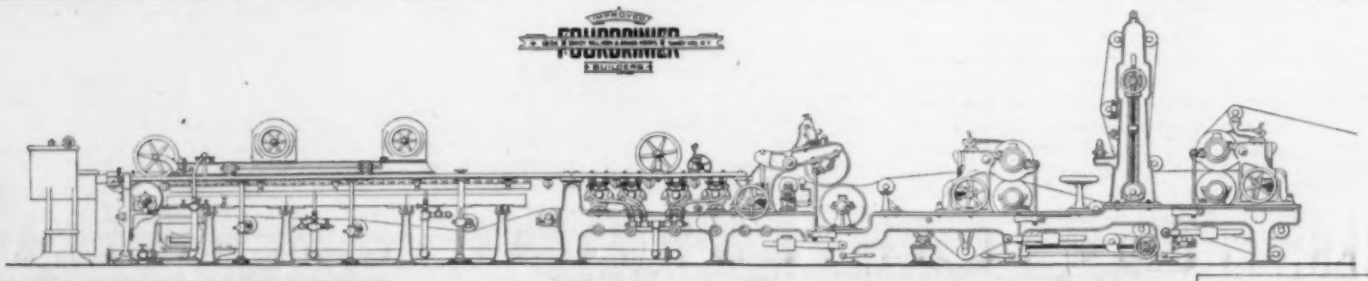

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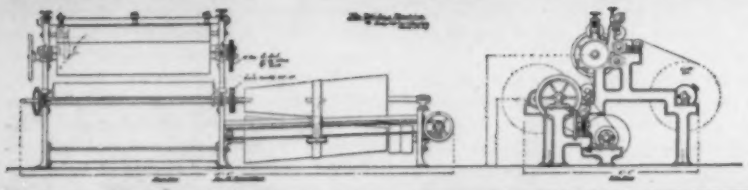

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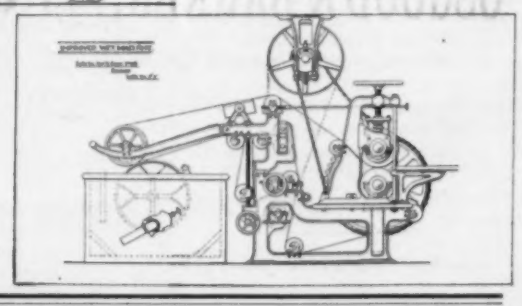

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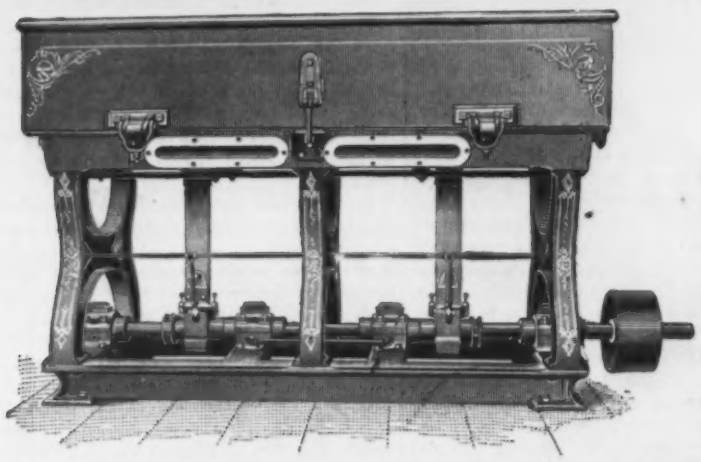

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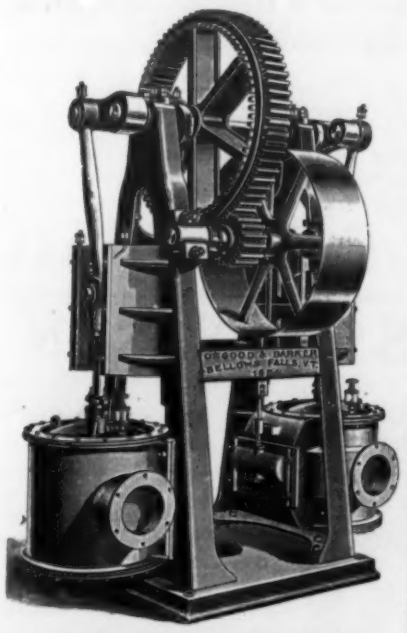

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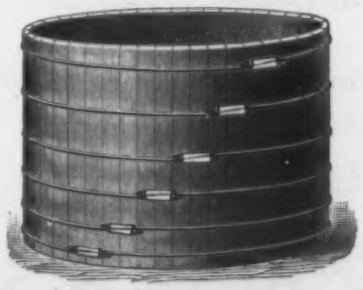

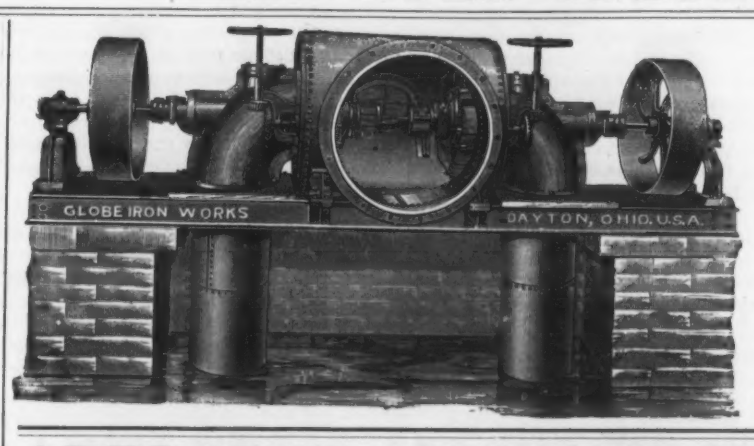

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⅞ "	16.42	122.00	127.18	195.19	82.58
¾ "	16.78	117.33	112.60	175.74	82.18
⅝ "	17.03	111.33	98.12	149.99	79.81
½ "	16.88	118.67	82.07	118.40	75.53

TEST OF A 42 INCH WHEEL—JULY 14, 1894.

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Whole Gate,	16.33	128.00	134.18	199.56	80.50
⅞ "	16.56	134.80	120.85	188.14	83.09
¾ "	16.59	129.33	104.85	162.89	82.77
⅝ "	17.13	125.25	92.76	142.40	79.21
½ "	17.48	121.00	70.80	99.85	70.60

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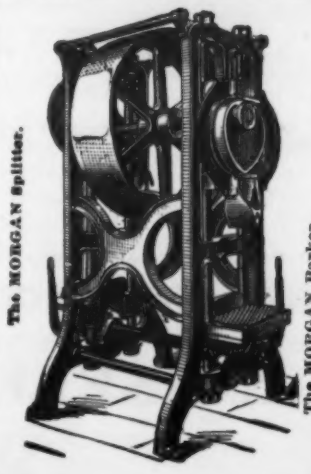

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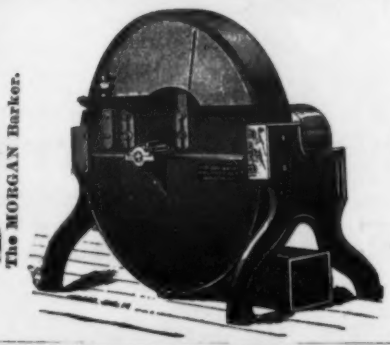

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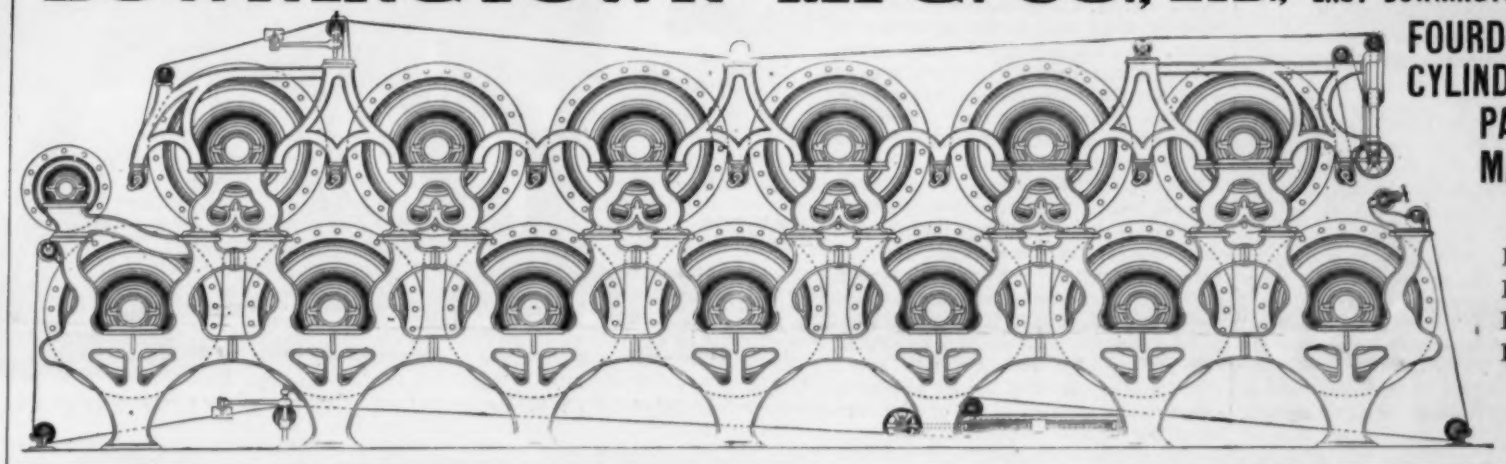

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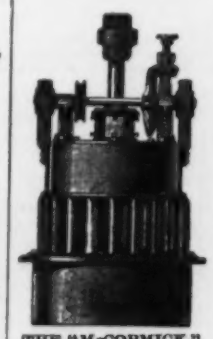


THE "McCORMICK."

The McCORMICK Turbine gives more power per diameter with a higher percentage of useful effect from the water used than any other water wheel heretofore made. All sizes, both right and left hand, tested in the Holyoke testing flume.

The SUCCESS Turbine, long and favorably known in the paper trade as a first-class water wheel, possesses valuable features found in no other turbine, and gives a high percentage of useful effect from the water used.

THE McCORMICK and SUCCESS TURBINES are especially adapted for driving Paper and Pulp Mills and are extensively used by the largest manufacturers in the United States and Canada. Parties using wheels which are unsatisfactory and those contemplating the improvement of powers will find it to their interest to confer with me, as I am willing to guarantee results where others have failed, no matter what make of turbines has been tried.

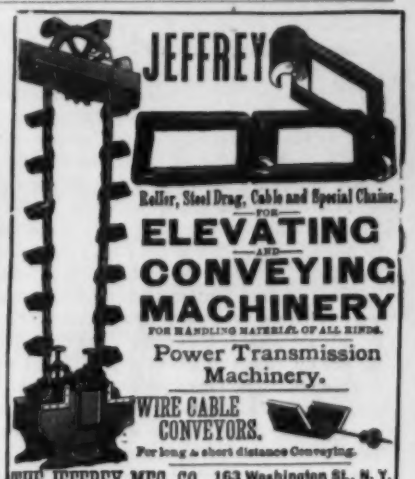
State requirements and send for catalogue.

Heavy Power Transmitting Machinery a Specialty.

S. MORGAN SMITH, York, Pa.

THE "SUCCESS."

JEFFREY



Roller, Steel Drag, Cable and Special Chains.

—FOR—

ELEVATING AND CONVEYING MACHINERY

FOR HANDLING MATERIAL OF ALL KINDS.

Power Transmission Machinery.

WIRE CABLE CONVEYORS.

For long & short distance Conveying.

THE JEFFREY MFG. CO. Columbus, Ohio. 163 Washington St., N. Y. Send for Catalogue.

THE UTILITY PAPER CO.

[Copy.]

Hartford City, Ind., April 6, 1895.

UNION STEAM PUMP CO., Battle Creek, Mich.:

Gentlemen:—Enclosed find check for pump. If your pump continues to do its work as satisfactorily as it has so far, we would rather pay the price for your pump than to take and use any other pump we now have in the mill as a gift. If it continues to work as it has we will have no other pump in our mills. Yours truly, THE UTILITY PAPER CO.

Dictated: A. B. TRENTMAN, President. Fleg.

(This is a 10 × 6 × 12 Single Cylinder Double Acting Frost, feeding six 100 Horse Power Boilers at twenty-three strokes per minute.)

Hadley & McDonald Machine Co.,

SHELTON, CONN.,

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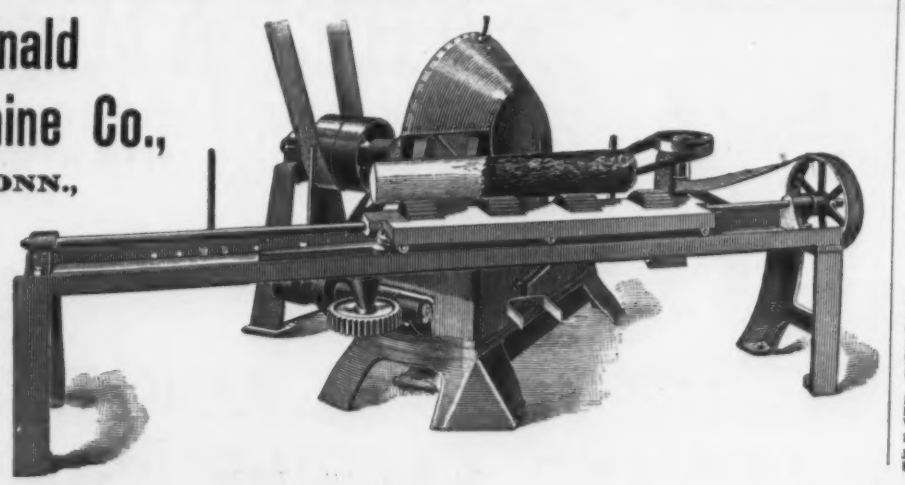
4 ft. Barkers.



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Peels equally well running backward or forward.

Wood peeled in 4 foot lengths saves Power, Time, Sawdust, Splinters, &c.

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—Thorough Inspection.—
Insurance against loss or damage to property; also against loss of life and injury by Steam Boiler Explosions.

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PETER F. PESCUD,	New Orleans, 186 Gravier street.

Asbestos Seat Gate Valve.

Almost all engineers have always had a prejudice against the use of a gate valve on steam. During the last twenty-five years, in which the valve has passed through many changes, a tight gate valve has been a rarity, for the construction was such as to render it impossible to prevent sticking or wedging fast, and the plug or gate was consequently quickly eaten away by scraping or wire drawing, while the many parts subject to wear rendered it anything but a desirable adjunct to the engine room. All who have shared this prejudice will probably be interested in the statement made by the Fairbanks Company, 311 Broadway, New York, that after going to much expense in making tests, patterns, machinery and tools, it has manufactured a valve called the "Asbestos Seat Gate Valve," which overcomes all of the troubles referred to, and others which experience has brought to notice.

ASBESTOS SEAT GATE VALVE.

The Asbestos Seat Gate Valve should be of particular interest to paper manufacturers, whose mills require more valves than an ordinary factory. The disk in this valve is made of a composition of asbestos fibre and waterproof vulcanizing material, which makes a packing which will not only not crack or flake off, but will not adhere to the gate or wedge. Its elasticity compensates for the usual expansion or contraction, and thus prevents binding of the gate when closed, and because of its softness anticipates any injury from pipe chips, grit, scale, &c., coming between it and the wedge. The ingredients composing this material, technically called "Vulcabeston," may be so varied as to make the product very hard, soft or pliable, and it therefore becomes very valuable for many uses. Another of its advantages in this connection is that it is very durable and offers a permanent resistance to the action of dry heat, acid, water and steam. Yet another is that the valve can after years of service be made practically new by renewing the wearing parts, *i. e.*, the seat rings, which cost only a fraction of the price of the original valve, require only a few minutes to insert and call for little or no skill in the operation. The valve is claimed to be an improvement over other valves, and, as improvement means expense, this valve is not a cheap affair.

The manufacturer points out that no mill owner can afford to economize by buying cheap machinery for on any part of the mill construction, the saving from which, while it may operate on first cost, will have to be expended in repairs many times over, not to mention the loss entailed by a shut-down due to a structural weakness caused by introducing cheap material, either in the structure of the building or the construction of the machinery. Those who are in search of a good but not a cheap valve—one which is tight and will remain so; one in which will be found the fewest parts and only the best metals, and one to which the best machine work has been applied to combine symmetry and strength with durability—will do well to examine the Asbestos Seat Gate Valve.

The valve is made in all sizes and in various styles, from 1¼ inches up to and beyond 24 inches, and in brass, aluminum, bronze and iron. Babbitt bronze or leather seat rings can be furnished. The larger sizes of valves are not carried in stock.

Wire Rope and its Uses.

We were considering in our last article on this subject the "tailrope" system of wire rope haulage. Much more important than this is the endless rope system, of which all have seen examples in the cable railways of our large cities. The same system is extensively used for other kinds of transportation, as in mines and on steep inclines where, for various reasons, other systems are not feasible. A typical example of endless rope traction is on the New York and Brooklyn Bridge, where all the cars are hauled by this system, the switching at either end of the line being done by steam locomotives.

In the system that we are now considering the rope is run continuously in one direction, by specially constructed engines, and the cars are attached to the rope by means of grips, a large number of different kinds of these devices having been produced. The simplest type of gripping device is in the form of tongs, the jaws of which are shaped to conform to the rope. There are many modifications of these tongs, more or less complicated and adapted to the various conditions of practice.

The driving engine is connected to a grooved drum, in which the grooves are annular rather than spiral, as is the case with those on the drum of the tailrope engine. In order to prevent any "riding" of the rope, another drum is mounted at a short distance from the engine drum. This drum is free to revolve in its bearings, and the driving rope is lapped around the two drums sufficiently to give the desired amount of driving friction. This second or idler drum is set at a slight angle to the driving drum, so that the rope, in passing from one drum to the other, may lead properly into each set of grooves. The idler drum is generally provided with means for taking up slack in the rope, as the ropes will stretch considerably, especially soon after being first put in use. In some cases the idler drum is replaced by a set of independent sheaves, for which arrangement various advantages are claimed.

A certain amount of tension on the rope is required for the proper working of this system, and it is obvious that the greater this tension the fewer laps of rope will be necessary on the drums. This of itself would be very desirable, as it would greatly lessen the wear on the rope due to bending, which is in most cases the greatest cause for the failure of wire ropes. However, this tension must not be too great, for, on the other hand, the rope must be sufficiently slack to enable the cars to round all the curves on the line without bringing too great side strains upon the gripping mechanism. The amount of tension to be applied in each particular case depends upon several conditions, such as the construction of the driving drum, the condition of the rope, the grades of the line, &c. For a certain required driving power the tension will be less, as well as the laps on the driving drum, if the rope is kept dry and free from grease.

For use in mines and in similar work the tailrope system has a great advantage over the endless rope in that sharp curves on the line, irregularity of grade and branch lines leading from the main line in no way interfere with its effective and economical working. The endless rope system requires about one-third less rope than the tailrope, but the rope must all be of the same diameter. For a single line without branches the first cost of the endless rope system is considerably less and more satisfactory in operation. In both of these systems it is customary to make use of either seven or nineteen wire rope, as the conditions of bending and abrasion seem to indicate.—*Industrial World.*

From the great power plant at Folsom, Cal., electricity will be transmitted to Sacramento, about 20 miles away, at a voltage of 10,000, over bare copper wires, supported with double petticoated porcelain insulators on cedar poles. The Folsom dam was erected largely for irrigation purposes; but water enough will be taken to run four 1,000 horse power three phase generators. There will be a duplicate pole line from the Folsom power house to the transformer station in Sacramento, to prevent interruption in case of accident.

THE ESTY AUTOMATIC SPRINKLER

FULL SIZE.

Has been OFFICIALLY approved and accepted by the

ASSOCIATED FACTORY MUTUAL INSURANCE COMPANIES, THE FACTORY IMPROVEMENT COMMITTEE OF THE NEW ENGLAND INSURANCE EXCHANGE, THE NEW YORK BOARD OF FIRE UNDERWRITERS and others, and fully complies with the latest standard requirements of all other Boards or Combinations of Fire Underwriters throughout the United States.

The most simple in construction; the most **Sensitive to Heat.** A fusible solder joint projects from the centre—therefore more accessible to **Sudden Fire.** Will stand more **abuse** from **violence** than any other Sprinkler. The most **Effective Distributor** of water, whether used **Upright** or **Pendent.**

A MICA SEATED VALVE is used, non-corrodible, non-adhesive, impenetrable and imperishable. Can be **Reseated** without being removed. Can also be opened and examined by **Insurance Inspectors** like other fire apparatus, which is a great **advantage** over all other sprinklers.

PRICE, - 60 CENTS.

For any information concerning Sprinkler Service apply to

ESTY SPRINKLER CO., 63 Mill St., Laconia, N. H., U. S. A.

THE GOTHAM NOISELESS SCREEN.

. . THE . .
LIGHTEST RUNNING SCREEN.
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ONLY NOISELESS SCREEN.

WE HAVE SCREENS IN USE WITH THE FOLLOWING MILLS:

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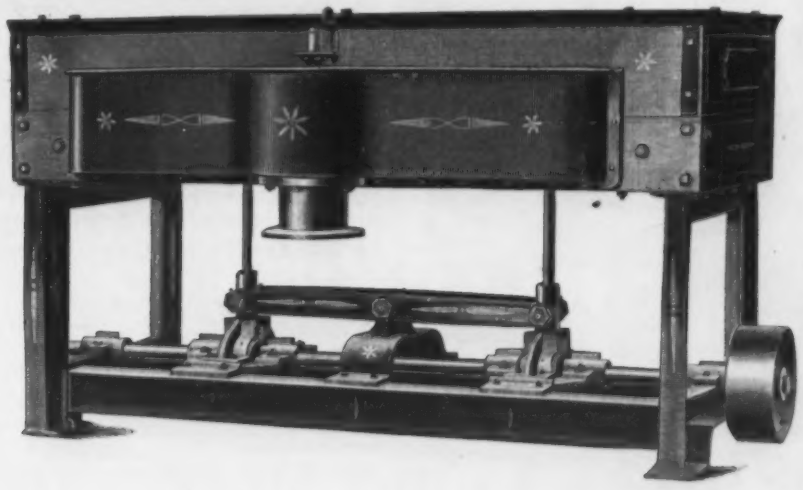
The Rumford Falls Paper Co.	Rumford Falls, Me.	21	2
The Niagara Falls Paper Co.	Niagara Falls, N. Y.	18	..
High Falls Sulphite Pulp Co.	Potsdam, N. Y.	10	..
The Empire Pulp Co.	Black River, N. Y.	1	..
Globe Paper Co.	Brownville, N. Y.	2	..
Union Pulp Co.	Carthage, N. Y.	1	..
Frontenac Paper Co.	Dexter, N. Y.	1	..
Leonard & Gilmore.	Dexter, N. Y.	1	..
Outterson Paper Co.	Brownville, N. Y.	3	3
Oswego Falls Paper Co.	Fulton, N. Y.	5	3
Gouverneur Wood Pulp Co.	Gouverneur, N. Y.	4	4
Knowlton Paper Co.	Watertown, N. Y.	1	..
Ontario Paper Co.	Watertown, N. Y.	5	3
Herkimer Paper Co.	Lyons Falls, N. Y.	4	3
G. H. P. Gould.	Port Leyden, N. Y.	1	..
Gould Paper Co.	Port Leyden, N. Y.	3	1
Racquette River Pulp Co.	Colton, N. Y.	3	..
Sparks Mfg. Co.	Hamburg, N. J.	1	..
Charles Callender	Glendale, Mass.	2	2
Merrimac Paper Co.	Lawrence, Mass.	2	2
Connecticut Paper Co	Holyoke, Mass.	1	..
Carew Mfg. Co.	South Hadley Falls, Mass.	2	2
Rice, Barton & Fales.	Worcester, Mass.	5	2
Eaton, Dikeman & Co.	Lee, Mass.	1	..
Fall Mountain Paper Co.	Bellows Falls, Vt.	13	3
Wyman Flint & Sons	Bellows Falls, Vt.	3	2
National Metal Edge Box Co.	Readsboro, Vt.	1	..
Glen Mfg. Co.	Berlin Falls, N. H.	10	3
Wilder & Co.	Ashland, N. H.	1	..
Umbagog Pulp Co.	Livermore Falls, Me.	2	..
Bangor Paper Co.	Bangor, Me.	4	..
Jay Paper Co.	Jay, Me.	1	..
White & Wells.	Waterbury, Conn.	2	2
St. Cloud Paper Co.	St. Cloud, Minn.	1	..
Columbian Paper Co.	Buena Vista, Va.	2	..
Anderson Paper Co.	Anderson, Ind.	3	2
Kaukauna Paper Co.	Kaukauna, Wis.	1	..
Willamette Pulp and Paper Co.	Oregon City, Ore.	13	6
California Paper Co.	Agnew, Cal.	1	..
Tennessee Pulp Co.	Memphis, Tenn.	1	..
Estate of Richard Carter.	Glendale, N. Y.	1	..
Charles Wackerhagen	Canaan Four Corners, N. Y.	1	..
Smeallie, Phillips & Co.	Amsterdam, N. Y.	1	..
O. E. Martin	Norwood, N. Y.	1	..
Jefferson Paper Co.	Black River, N. Y.	3	3
St. Lawrence Paper Co.	Dexter, N. Y.	3	3
Payn & Blinn	Chatham, N. Y.	1	..

HOUSES.	CITY AND STATE.	SCREENS.	ORDERS.
M. M. Pillsbury.	Napanoch, N. Y.	1	..
Victoria Paper Co.	Fulton, N. Y.	2	1
Philip McGuire.	Forestport, N. Y.	1	..
Hartland Paper Co.	Middleport, N. Y.	1	..
Standard Pulp Co.	Jennie o Falls, N. Y.	3	..
Bacon Paper Co.	Lawrence, Mass.	1	..
Watertown Paper Co.	Watertown, N. Y.	3	1
Alpena Sulphite Pulp Co.	Alpena, Mich.	4	3
Hollingsworth & Whitney	Winslow, Me.	4	3
Fulton Paper Co.	Fulton, N. Y.	2	2
Lyonsdale Paper Co.	Lyonsdale, N. Y.	1	..
Newton Pulp Co.	Newton, Nova Scotia.	4	..
George Wheelwright Paper Co.	Fitchburg, Mass.	3	..
Lewis, Slocum & Lefevre	Beaver Falls, N. Y.	4	..
Racquette River Pulp Co.	Potsdam, N. Y.	4	3
D. T. Lawless.	Penfield, N. Y.	1	..
Green Mountain Pulp Co.	Middlebury, Vt.	2	..
Morgan Falls Pulp Co.	Morgan Falls, Nova Scotia.	4	..
Blordon Paper Mills.	Merritton, Ontario.	4	..
Paragon Paper Co.	Eaton, Ind.	1	..
Mount Tom Sulphite Pulp Co.	Mount Tom, Mass.	21	5
Remington Paper Co.	Watertown, N. Y.	8	8
F. E. Robinson.	Carthage, N. Y.	2	..
Niagara Paper Mills.	Lockport, N. Y.	1	..
Brownville Paper Co.	Brownville, N. Y.	1	..
Indurated Fibre Co. of New Jersey	Lockport, N. Y.	1	..
Cushnoc Fibre Co.	Augusta, Me.	3	..
Adirondack Water Power and Paper Co.	Malone, N. Y.	1	..
Manayunk Paper Co.	Manayunk, Pa.	1	..
C. R. Remington & Son Co.	Watertown, N. Y.	3	3
C. G. Haubold, Jr.	Chemnitz, Germany	1	..
Sissiboe Falls Pulp Co.	Sissiboe Falls, Nova Scotia.	1	..
Delphos Pulp Co.	Delphos, Ohio.	1	..
Barclay Fibre Co.	Saugerties, N. Y.	3	..
Napanee Pulp and Paper Co.	Napanee, Ontario.	2	..
J. H. Horne & Sons.	Lawrence, Mass.	1	..
York Haven Paper Co.	York Haven, Pa.	4	..
Glens Falls Paper Mill Co.	Fort Edward, N. Y.	7	..
J. & J. Rogers Co.	Ausable Forks, N. Y.	1	..
S. D. Warren & Co.	Cumberland Mills, Me.	1	..
Copsecook Mills.	Gardiner, Me.	1	..
Manufacturing Investment Co.	Appleton, Wis.	1	..
Carolina Fibre Co.	Hartsville, S. C.	2	..
C. E. Hargrave Sulphite Paper Co.	Hinckley, N. Y.	15	..
Friend & Stebbins Mfg. Co.	West Carrollton, Ohio.	1	..
Centralia Pulp and Water Power Co.	Centralia, Wis.	3	..

Built by BROWNVILLE IRON WORKS, Brownville, N. Y.



THE "AMERICAN" SCREEN.

SOME SCREENS ARE GOOD.
OTHER SCREENS ARE BETTER.
THE "AMERICAN" IS THE BEST.

It Runs Easier, Lasts Longer, Makes Less Noise and Does More Work than any other.

BLACK RIVER IRON WORKS

(A. D. CLARK, Proprietor),

WRITE FOR DETAILS.

Black River, N. Y.

Jokers.

The Duluth *Herald* has the following: If you want good, old-fashioned practical jokers it is pretty certain that a genuine and superior article can be found at Little Falls in this State. From what the *Herald* hears they stay up nights trying to play even with one another, too.

The Hennepin Paper Company, from which the *Herald* secures the big rolls of white paper for its press, is located there, and in the employ of the company is a gentleman by the name of J. P. Frampton. Now Mr. Frampton is not only genial and socially inclined, but he is an inveterate sportsman and chicken fancier. His skill with a shotgun is only equaled by the size and quality of the poultry he raises.

It happens that those aboriginal denizens of Minnesota, skunks, are not yet extinct in and around Little Falls. It has happened, too, that Mr. Frampton's fat poultry has been a constant source of temptation to the odoriferous plantigrades, and each summer for several years he has killed not less than a dozen of the black and white depredators. As a result, his reputation as a skunk killer is widely known and firmly established.

Last fall, one evening, a number of Frampton's friends came to his house for a social evening. A number of ladies were unaccompanied by their husbands, but announced that they would come along later.

All hands had just got nicely interested in a game of cards when a friend named Turner rushed to the Frampton residence and hastily and vigorously pulled the door bell.

"Frampton, get your gun! Two skunks have just crossed the road into your chicken yard."

Mr. Frampton remembered that it was rather late in the season for skunks to be out—it was in December—and that it was unusual for them to go chicken raiding in pairs. But Turner was so excited, so earnest and so persistent that the noted skunk hunter did not smell the nigger in the woodpile. If he had only glanced at the faces of his guests in the room he might have done so, but instead of standing still and gazing into the faces of those in the room he took his shotgun from the wall and started for the skunks.

When Mr. Frampton reached the yard with his guide, by the dim light of the moon, which was just peeping up from behind a big tree, were seen two black and white objects, just the size that able-bodied skunks should be, slowly but steadily making straight for the chicken house. Mr. Frampton, too, was so interested and excited by the sight that he failed to see the broad grin on the face of the man in the moon as the old fellow peeped over the top of the big tree.

Up went the gun. Bang! bang! A charge of No. 5 shot from a No. 12 bore gun of the latest pattern lodged in the body of each of the supposed marauders. Most remarkable, too, was the fact that the usual diffusion of skunky odor did not follow the shots.

When the smoke cleared away the animals were still moving forward, but much more slowly.

"They're wounded! Give them another! They may get away in the rubbish!" exclaimed the onlookers.

So Frampton pumped away at his gun and put two more loads of shot into each animal. Then, by chance and a light from the window, he discerned a string—yes, two strings, tied to each animal and leading to a neighboring ditch.

"Oh, h-e—l! there's a string to 'em!" exclaimed the knight of the shotgun.

Then as if the lower regions had broken loose a yell went up from fifty throats that could have been heard in Staples. The village jokers had secured another victim. The skunks were made of black and white muslin, stuffed.

Said Mr. Frampton, in a letter to a friend in Duluth: "The villains had half the town invited out and concealed behind trees, fences and in the ditch to see me kill those skunks and then give me the laugh. The next day it seemed as if every man, woman and child in the town telephoned me asking for quotations on skunk oil. It only cost me $20 to set 'em up to the boys. But do you think I won't get even? You will hear something drop before another skunk season is over."

Mr. Frampton did play even, and in a very ingenious manner. A recent copy of the Little Falls *Transcript* says:

"A muskellunge, over 4 feet long, a spear and fishing tackle decorate the window of the Hotel Buckman sample room; and thereby hangs a tale.

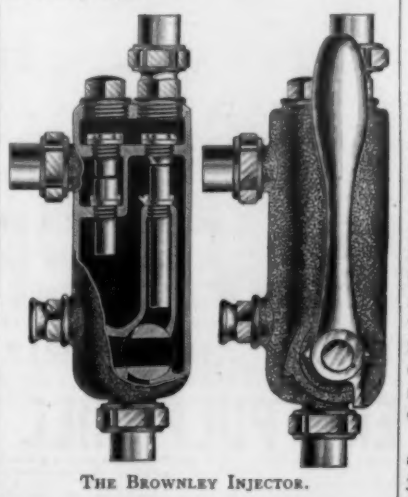
"On Saturday night Alderman F. F. Turner and Russell Baker went out spearing on the Mississippi near the island, the boat being managed by J. P. Frampton and C. Van Buskirk. After spearing for some time Mr. Frampton steered the boat within about 100 feet from the island, and here the fishermen spied lying quietly on the bottom of the river what appeared to be a muskellunge of leviathan proportions. The fish wiggled its tail and both men speared at him. The waters were troubled immediately and Baker held onto the spear and Turner onto Baker until both went partially into the water. They let go and the fish continued his course for shore with the spear still sticking into him. He did not stop when he reached high water mark, but went on into the brush. Turner and Baker then murmured, 'Do my eyes deceive me, or has the accursed river water crazed my brain?' They then realized that they had been fooled and let down hard, that the fish was a decoy with a wire attached. Frampton and Van Buskirk were on, but afraid to laugh lest they should be thrown from the boat, so pulled for the shore, and when they reached it their laughter broke the atmosphere up in chunks.

"The fellows who had the string on the fish brought it uptown and Turner and Baker spent Sunday in thinking up some scheme for getting square.

"The decoy is a dandy and manufactured right at home. It is made of rubber belting sewed up and stuffed with sawdust; a lead pipe was then fastened to it. It was then pointed, and so perfect that it would fool the oldest fish in the river, to say nothing of Turner and Baker."

The Brownley Double Tube Injector.

Illustrations are given of a new double tube valueless injector, which works at any pressure from 15 pounds up to 350 pounds, and all of the way from 350 pounds down to 6 pounds without regulation and without breaking, and lifts and feeds water on a 3 foot lift at temperatures up to 156° and on a 22 feet lift as high as 130°. These leading points are gathered from certificates of thoroughly well known and independent people, published by the agents for the Brownley injector.



THE BROWNLEY INJECTOR.

The device appears to be very simple. The steam inlet is one size smaller than the suction and delivery, thus being very economical as regards steam. To start the injector steam is given, and the water will immediately appear at the overflow; the cock is turned by means of a lever, and the water is then fed to the boiler. No variation of steam at any point from 350 pounds down to six pounds of steam causes any loss of water at the overflow. The general foreman of the Manhattan Railway says that he tested this machine against a standard injector of the same size and was somewhat surprised at the result, the Brownley throwing about 33 per cent. more water in a given time than the other, and doing it steadily. He also says that one of the greatest points about the injector is its great simplicity, which will be duly appreciated by those having charge of injector repairs. There are no valves to grind. Any ordinary mechanic can take the machine apart and put it together in five minutes, and a plant thus provided never has to shut down on account of injector repairs.

The tendency of the age is all toward higher steam. It is asserted that in a few years 300 pounds will be as common as 175 pounds is to-day. Many experiments have accordingly been made by injector manufacturers, and large sums of money have been spent to attain this object, but so far it is asserted that the Brownley is the only injector which has yet been made to feed up to 350 pounds pressure, and it feeds as easily at that point as at any other.

The injector for locomotive purposes is slightly varied in form, so as to be interchangeable with any standard injector. No jar or application of the emergency brake will cause the injector to break.

Circulars containing certificates from reliable and well-known users of steam can be obtained on application to E. F. Keating, 457 Water street, New York, the general agent in the East.

The Keely Motor.

Mrs. Bloomfield Moore, the well-known friend of the poet Browning, and for many years the patroness of John Worrall Keely, the inventor of the Keely motor, sends to the *Sun* this statment:

Between 1872 and 1882 the Keely Motor Company was managed as a speculation. In consequence, it met its downfall in the latter year, leaving on the public mind an impression that Mr. Keely was responsible for the losses of the stockholders. It has taken nearly thirteen years to remove this impression and to induce men of science to examine into the nature of Mr. Keely's researches and into his claims as the discoverer of an unknown energy.

Recently Mrs. Bloomfield Moore has been accused of wrecking the company in conjunction with Mr. Keely. The facts are that Mrs. Bloomfield Moore in 1890 agreed to supply the needed funds to enable Mr. Keely to carry on his researches and experiments, on condition that he should not give exhibitions of unpatentable engines for speculative purposes; that within a year Mr. Keely's counsel required such exhibitions; that Mrs. Moore told Mr. Keely that if he gave them she would furnish no more money, and that Mr. Keely kept faith with her. The late speculative managers of the company are the authors of the attacks, Mrs. Moore says, and their animus is evident. They have desired to renew the speculative dealings in the stock of the company, for which purpose exhibitions are needed to boom the stock; Mrs. Moore's contract with Mr. Keely prevents these, and will continue to do so until Mr. Keely is ready to have the stock put on the market on its merits.

Mr. Keely does not believe in perpetual motion, and his motor is in no respect an attempt to solve the problem of perpetual motion. His system of physics is a vibratory system, in which there is no question of centrifugal force.

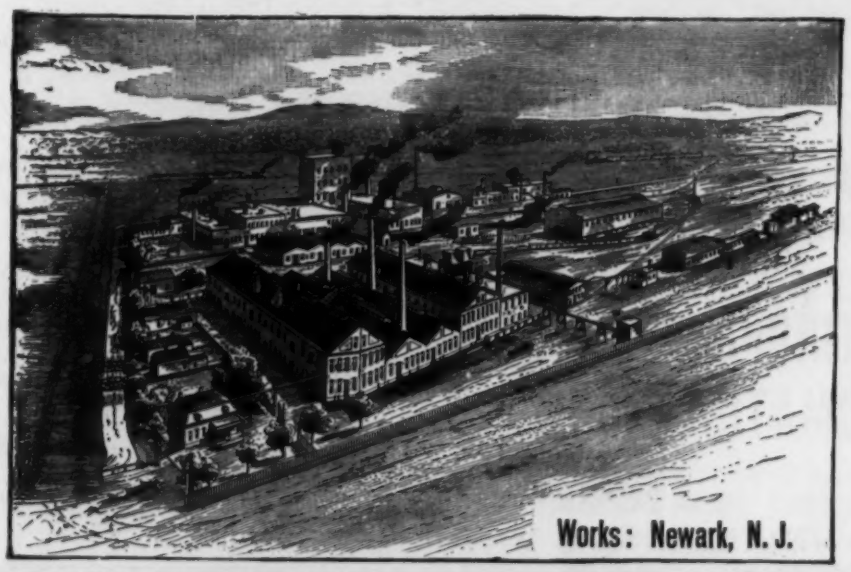
Air as a Timber Preservative.

Probably no better illustration can be had, even at the present time, of the great importance of free access of air to woodwork as a means of protection against premature decay, than the results of an investigation, conducted a few years ago, into the causes of an accident in an expensive apartment house in one of the principal cities of the United States, in which a portion of one of the upper floors gave way, and, in falling, carried along corresponding sections of the several floors below, landing the whole mass of wreckage in the cellar.

It was found that a fortunately unusual system of floor construction had been adopted in the building in question, the spaces between the wooden beams having been filled with ashes, presumably with the view of making a comparatively fireproof structure. Whatever its merits in this respect may have been, there was no question whatever that the mixture of ashes formed a most efficient barrier against the access of air to the timbers, and any moisture that was inherently in them or afterward found its way to them through the tiling above had little opportunity of being carried away by any ventilating air currents. The beams simply had to rot, and that comparatively quickly. In the subsequent work of reconstruction of the floors, however, good care was taken that they should not again suffer in the same way.

Mill architects generally appreciate the preserving influence of free air circulation so thoroughly that they carefully guard against even the painting of any floor beams which are open to the suspicion of imperfect seasoning. Where any moisture is still present in the wood, a coat of paint or tar or anything else impervious to air, ordinarily looked upon as a protective agent, simply prevents this moisture from escaping, and thus, instead of guarding against rapid decay, really promotes it to a very material degree. Happily this circumstance is becoming properly recognized and is beginning to receive a due share of attention.—*Cassier's Magazine.*

The decreasing efficiency of a boiler is sometimes due to simple causes easily remedied. A boiler in which the decrease was considerable was investigated by the engineer, who discovered that the side doors at the side of the setting had sprung and air was leaking into the boiler at a rapid rate.



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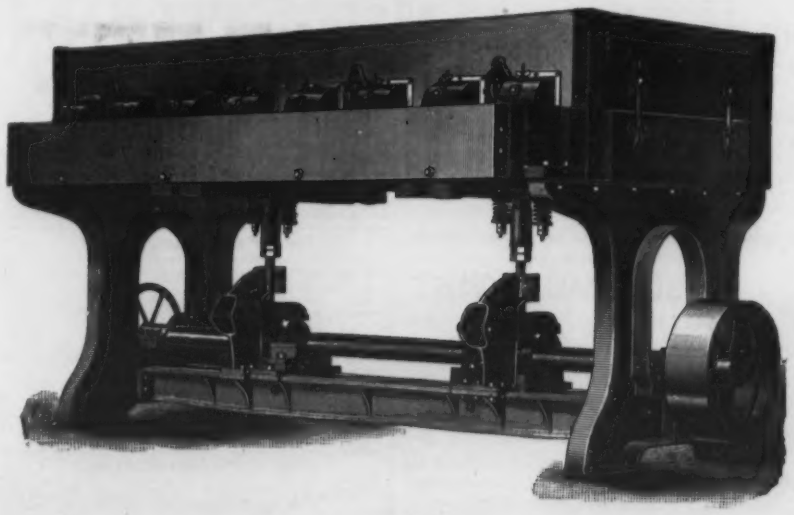

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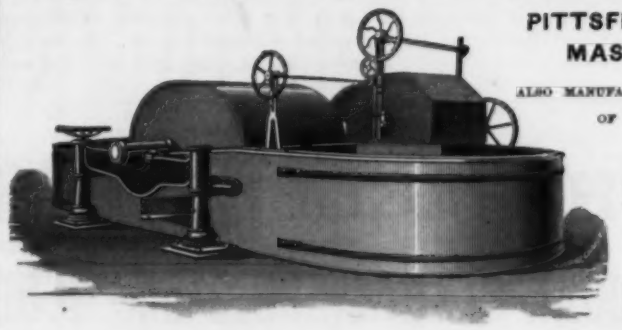

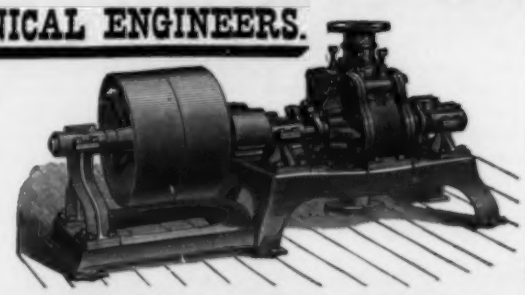

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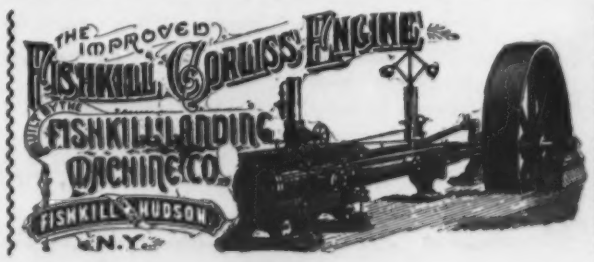

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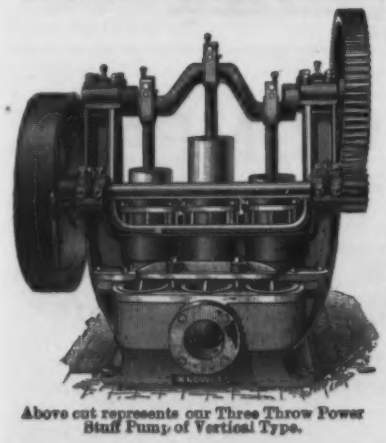

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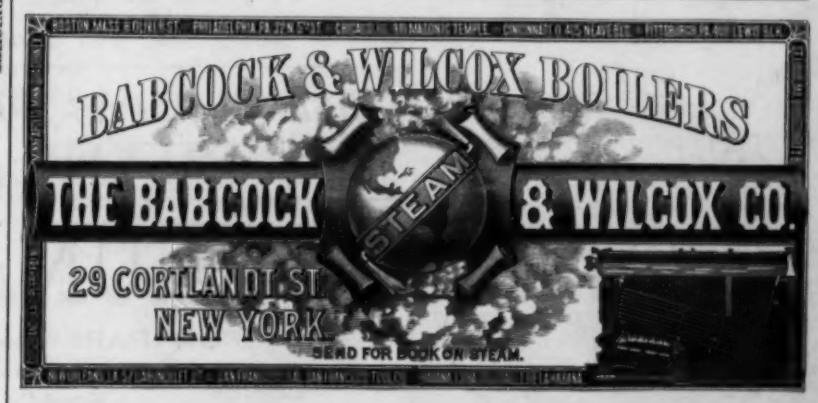

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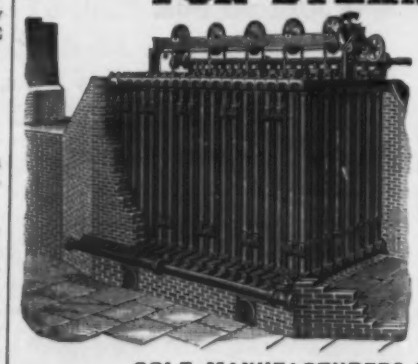

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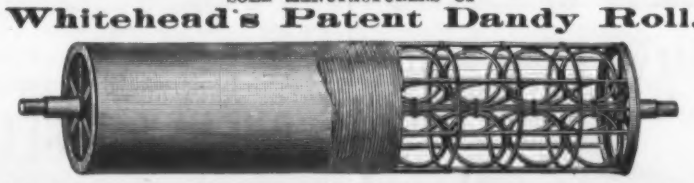

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